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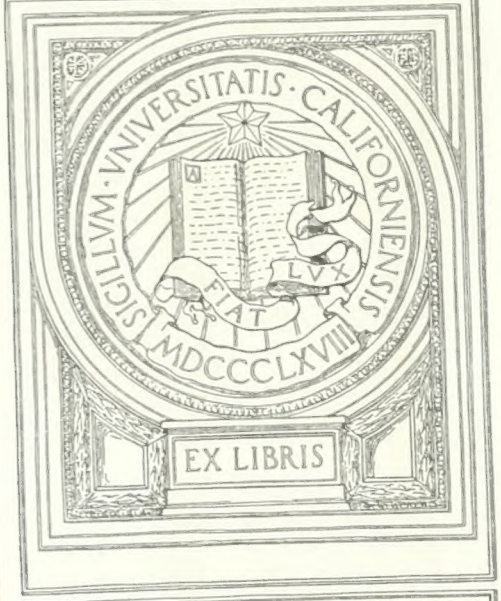

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VOL. XVI. RAN——SCO

INDOCTI DISCANT, ET AMENT MEMINISSE PERITI.

PHILADELPHIA:

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ENCYCLOPÆDIA.

Rana. RANA, the frog, in zoology; a genus belonging to the order of amphibia reptilia. The body is naked, furniſhed with four feet, and without any tail. There are 17 ſpecies. The moſt remarkable are,

1. The temporaria, or common frog. This is an animal ſo well known, that it needs no deſcription; but ſome of its properties are very ſingular.

Its ſpring, or power of taking large leaps, is remarkably great, and it is the beſt ſwimmer of all four-footed animals. Nature hath finely adapted its parts for thoſe ends, the fore members of the body being very lightly made, the hind legs and thighs very long, and furniſhed with very ſtrong muſcles.

While in a tadpole ſtate, it is entirely a water animal; the work of generation is performed in that element, as may be ſeen in every pond during ſpring, when the female remains oppreſſed by the male for a number of days.

The work of propagation is extremely ſingular, it being certain that the frog has not a *penis intrans*. There appears a ſtrong analogy in this caſe between a certain claſs of the vegetable kingdom and thoſe animals; for it is well known, that when the female frog depoſits its ſpawn, the male inſtantaneouſly impregnates it with what we may call a *farina fœcundans*, in the ſame manner as the palm-tree conveys fructification to the flowers of the female, which would otherwiſe be barren.

As ſoon as the frogs are releaſed from their tadpole ſtate, they immediately take to land; and if the weather has been hot, and there fall any refreſhing ſhowers, you may ſee the ground for a conſiderable ſpace perfectly blackened by myriads of theſe animalcules, ſeeking for ſome ſecure lurking places. Some philoſophers, not giving themſelves time to examine into this phenomenon, imagined them to have been generated in the clouds, and ſhowered on the earth; but had they, like Derham, but traced them to the next pool, they would have found a better ſolution of the difficulty. See *Preternatural* RAINS.

As frogs adhere cloſely to the backs of their own ſpecies, ſo we know they will do the ſame by fiſh.—Walton mentions a ſtrange ſtory of their deſtroying pike; but that they will injure, if not entirely kill carp, is a fact indiſputable, from the following relation. Not many years ago, on fiſhing a pond belonging to Mr Pitt of Encomb, Dorſetſhire, great numbers of the carp were found each with a frog mounted on it, the hind legs clinging to the back, and the fore legs fixed in the corner of each eye of the fiſh, which were thin and greatly waſted, teized by carrying ſo diſagreeable a load. Theſe frogs Mr Pennant ſuppoſes to have been males diſappointed of a mate. Rana.

The croaking of frogs is well known; and from that in fenny countries they are diſtinguiſhed by ludicrous titles: thus they are ſtyled in England *Dutch nightingales*, and *Boſton waites*.

Yet there is a time of the year when they become mute, neither croaking nor opening their mouths for a whole month: this happens in the hot ſeaſon, and that is in many places known to the country people by the name of the *paddock moon*. It is ſaid, that during that period their mouths are ſo cloſed, that no force (without killing the animal) will be capable of opening them.

Theſe, as well as other reptiles, feed but a ſmall ſpace of the year. The food of this genus is flies, inſects, and ſnails. Toads are ſaid to feed alſo on bees, and to do great injury to thoſe uſeful inſects.

During winter, frogs and toads remain in a torpid ſtate: the laſt of which will dig into the earth, and cover themſelves with almoſt the ſame agility as the mole. See PHYSIOLOGY, n° 48 and note (B), and n° 52.

2. The eſculenta, or edible frog, differs from the former, in having a high protuberance in the middle of the back, forming a very ſharp angle. Its colours are alſo more vivid, and its marks more diſtinct; the ground colour being a pale or yellowiſh green, marked with rows of black ſpots from the head to the rump.—This, and (Mr Pennant thinks) the former, are eaten. He has ſeen in the markets at Paris whole hampers full, which the venders were preparing for the table, by ſkinning and cutting off the fore-parts, the loins and legs only being kept; but his ſtrong diſlike to theſe reptiles prevented a cloſe examination into the ſpecies.

3. In the ſtate of Pennſylvania, and ſome other parts of North America, there is a very large ſpecies of frogs called the *bull-frog*, or *rana ocellata*. Their irides are of a duſky red, ſurrounded with a yellow ring. The auricles are covered with a thin circular ſkin, which forms a ſpot behind each eye. They have four toes on the fore-feet, and five palmated toes behind. Their colour is a duſky brown, mixed with yellowiſh green, and ſpotted with black. The belly is yellowiſh, and faintly ſpotted. Theſe make a monſtrous roaring noiſe like a bull, only ſomewhat more hoarſe. Their ſize is ſuperior to that of any other of the genus, and they can ſpring forward three yards at a leap. By this means they will equal in ſpeed a very good horſe in its ſwifteſt courſe. Their places of abode are ponds, or bogs with ſtagnant water; but they never frequent ſtreams. When many

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Rana. of them are together, they make ſuch a horrid noiſe, that two people cannot underſtand each other's ſpeech. They croak all together, and then ſtop for a little and begin again. It ſeems as if they had a captain among them: for when he begins to croak, all the others follow; and when he ſtops, they alſo become ſilent. When this captain gives the ſignal for ſtopping, you hear a note like *poop* coming from him. In the day-time they ſeldom make any great noiſe, unleſs the ſky is covered; but in the night-time they may be heard at the diſtance of a mile and an half. When they croak, they are commonly near the ſurface of the water, under the buſhes, and have their heads out of the water. By going ſlowly, therefore, one may get up almoſt quite cloſe to them before they go away. As ſoon as they are quite under water, they think themſelves ſafe, though it be ever ſo ſhallow. Theſe creatures kill and eat young ducklings and goſlings, and ſometimes carry off chickens that come too near the water; when beaten, they cry out almoſt like little children. As ſoon as the air begins to grow a little cool in autumn, they hide themſelves under the mud in the bottom of ſtagnant waters, and lie there torpid during the winter. As ſoon as the weather grows mild towards ſummer, they begin to get out of their holes and croak. They are ſuppoſed by the people of Virginia to be the purifiers of waters, and are reſpected as the genii of the fountains. Some of them were taken to England alive ſeveral years ago.

4. To bufo, or toad, is the moſt deformed and hideous of all animals. The body is broad; the back flat, and covered with a dimply duſky hide; the belly large, ſwagging, and ſwelling out; the legs ſhort, and its pace laboured and crawling; its retreat gloomy and filthy: in ſhort, its general appearance is ſuch as to ſtrike one with diſguſt and horror. Yet it it ſaid by thoſe who have reſolution to view it with attention, that its eyes are fine; to this it ſeems that Shakeſpeare alludes, when he makes his Juliet remark,

Some ſay the lark and loathed toad change eyes:

As if they would have been better beſtowed on ſo charming a ſongſter than on this raucous reptile.

But the hideous appearance of the toad is ſuch as to make this one advantageous feature overlooked, and to have rendered it in all ages an object of horror, and the origin of moſt tremendous inventions. Ælian makes its venom ſo potent, that baſiliſk-like it conveyed death by its very look and breath; but Juvenal is content with making the Roman ladies who were weary of their huſbands form a potion from its entrails, in order to get rid of the good man. This opinion begat others of a more dreadful nature; for in after-times ſuperſtition gave it preternatural powers, and made it a principal ingredient in the incantations of nocturnal hags.

This animal was believed by ſome old writers to have a ſtone in its head fraught with great virtues medical and magical: it was diſtinguiſhed by the name of the reptile, and called the *toad-ſtone*, *bufonites*, *crapaudine*, *krottenſtein*; but all its fancied powers vaniſhed on the diſcovery of its being nothing but the foſſil-tooth of the ſea-wolf‡, or of ſome other flat-toothed fiſh, not unfrequent in Britain as well as ſeveral other countries. Rana.

‡See Anarnicas.

But theſe fables have been long exploded. And as to the notion of its being a poiſonous animal, it is probable that its exceſſive deformity, joined to the faculty it has of emitting a juice from its pimples, and a duſky liquid from its hind parts, is the foundation of the report.

That it has any noxious qualities there ſeem to have been no proofs in the ſmalleſt degree ſatisfactory, tho' we have heard many ſtrange relations on that point.—On the contrary, there have been many who have taken them in their naked hands, and held them long without receiving the leaſt injury: it is alſo well known that quacks have eaten them, and have beſides ſqueezed their juices into a glaſs and drank them with impunity. We may ſay alſo, that theſe reptiles are a common food to many animals; to buzzards, owls, Norfolk plovers, ducks, and ſnakes, who would not touch them were they in any degree noxious.

So far from having venomous qualities, they have of late been conſidered as if they had beneficent ones; particularly in the cure of the moſt terrible of diſeaſes, the *cancer*, by ſuction: (See *Britiſh Zoology* vol. iii. Append. p. 389, *et ſeq.*) But, from all circumſtances, as Mr Pennant obſerves they ſeem only to have rendered a horrible complaint more loathſome.

The moſt full information concerning the nature and qualities of this animal is contained in the following letters from Mr Arſcott and Mr Pittfield to Dr Milles. "It would give me great pleaſure (ſays Mr Arſcott) to be able to inform you of any particulars worthy Mr Pennant's notice, concerning the toad who lived ſo many years with us, and was ſo great a favourite. The greateſt curioſity in it was its becoming ſo remarkably tame. It had frequented ſome ſteps before the hall-door ſome years before my acquaintance commenced with it, and had been admired by my father for its ſize (which was of the largeſt I ever met with), who conſtantly paid it a viſit every evening. I knew it myſelf above 30 years; and by conſtantly feeding it, brought it to be ſo tame, that is always came to the candle, and looked up as if expecting to be taken up and brought upon the table, where I always fed it with inſects of all ſorts; it was fondeſt of fleſh maggots, which I kept in bran; it would follow them, and, when within a proper diſtance, would fix its eye, and remain motionleſs for near a quarter of a minute, as if preparing for the ſtroke, which was an inſtantaneous throwing its tongue at a great diſtance upon the inſect, which ſtuck to the tip by a glutinous matter: the motion is quicker then the eye can follow (A).

"I always imagined that the root of its tongue was placed in the forepart of its under jaw, and the tip towards its throat, by which the motion muſt be a half circle; by which, when its tongue recovered its ſituation, the inſect at the tip would be brought to the place of deglutition. I was confirmed in this by never obſerving any internal motion in its mouth, excepting one ſwallow the inſtant its tongue returned. Poſſibly I might be miſtaken; for I never diſſected one, but contented

(A) This rapid capture of its prey might give occaſion to the report of its faſcinating powers, Linnæus ſays, *Inſecta in fauces faſcino revocat.*

Rana. tented myſelf with opening its mouth, and ſlightly inſpecting it.

" You may imagine, that a toad, generally deteſted, (although one of the moſt inoffenſive of all animals), ſo much taken notice of and befriended, excited the curioſity of all comers to the houſe, who all deſired to ſee it fed; ſo that even ladies ſo far conquered the horrors inſtilled into them by nurſes, as to deſire to ſee it. This produced innumerable and improbable reports, making it as large as the crown of a hat, &c. &c."

The following are anſwers from the ſame gentleman to ſome queries propoſed by Mr Pennant.

" *Firſt*, I cannot ſay how long my father had been acquainted with the toad before I knew it; but when I firſt was acquainted with it, he uſed to mention it as the old toad I've known ſo many years; I can anſwer for 36 years.

" *Secondly*, No toads that I ever ſaw appeared in the winter ſeaſon. The old toad made its appearance as ſoon as the warm weather came, and I always concluded it retired to ſome dry bank to repoſe till the ſpring. When we new-lay'd the ſteps, I had two holes made in every third ſtep, with a hollow of more than a yard long for it, in which I imagine it ſlept, as it came from thence at its firſt appearance.

Thirdly, It was ſeldom provoked: neither that toad, nor the multitudes I have ſeen tormented with great cruelty, ever ſhowed the leaſt deſire of revenge, by ſpitting or emitting any juice from their pimples.—Sometimes, upon taking it up, it would let out a great quantity of clear water, which, as I have often ſeen it do the ſame upon the ſteps when quite quiet, was certainly its urine, and no more than a natural evacuation.

Fourthly, A toad has no particular enmity for the ſpider; he uſed to eat five or ſix with his millepedes (which I take to be its chief food) that I generally provided for it before I found out that fleſh maggots, by their continual motion, was the moſt tempting bait; but, when offered, it eat blowing flies and humble bees that came from the rat-tailed maggot in gutters, or in ſhort any inſect that moved. I imagine, if a bee was to be put before a toad, it would certainly eat it to its coſt; but as bees are ſeldom ſtirring at the ſame time that toads are, they can ſeldom come in their way, as they ſeldom appear after ſun-riſing or before ſun-ſet. In the heat of the day they will come to the mouth of their hole, I believe, for air. I once from my parlour window obſerved a large toad I had in the bank of a bowling-green, about 12 at noon, a very hot day, very buſy and active upon the graſs; ſo uncommon an appearance made me go out to ſee what it was, when I found an innumerable ſwarm of winged ants had dropped round his hole, which temptation was as irreſiſtible as a turtle would be to a luxurious alderman. Rana.

" *Fifthly*, Whether our toad ever propagated its ſpecies, I know not; rather think not, as it always appeared well, and not leſſened in bulk, which it muſt have done, I ſhould think, if it had diſcharged ſo large a quantity of ſpawn as toads generally do. The females that are to propagate in the ſpring, I imagine, inſtead of retiring to dry holes, go into the bottom of ponds, and lie torpid among the weeds: for to my great ſurpriſe, in the middle of the winter, having for amuſement put a long pole into my pond, and twiſted it till it had gathered a large volume of weed, on taking it off I found many toads; and having cut ſome aſunder with my knife, by accident, to get off the weed, found them full of ſpawn not thoroughly formed. I am not poſitive, but think there were a few males in March; I know there are 30 males (B) to one female, 12 or 14 of whom I have ſeen clinging round a female: I have often diſengaged her, and put her to a ſolitary male, to ſee with what eagerneſs he would ſeize her. They impregnate the ſpawn as it is drawn (C) out in long ſtrings, like a necklace, many yards long, not in a large quantity of jelly, like frogs ſpawn.

A 2 *Sixthly*,

(B) Mr John Hunter has aſſured me, that during his reſidence at Belleiſle, he diſſected ſome hundreds of toads, yet never met with a ſingle female among them.

(C) I was incredulous as to the *obſtetrical* offices of the male toad; but ſince the end is ſo well accounted for, and the fact eſtabliſhed by ſuch good authority, belief muſt take place.

Mr Demours, in the Memoirs of the French Academy, as tranſlated By Dr Templeman, vol. i. p. 371, has been very particular in reſpect to the male toad as acting the part of an *accoucheur*: His account is curious, and claims a place here.

" In the evening of one of the long days in ſummer, Mr Demours, being in the king's garden, perceived two toads *coupled together* at the edge of an hole, which was formed in part by a great ſtone at the top.

" Curioſity drew him to ſee what was the occaſion of the motions he obſerved, when two facts equally new ſurpriſed him. The *firſt* was the extreme difficulty the female had in laying her eggs, inſomuch that ſhe did not ſeem capable of being delivered of them without ſome aſſiſtance. The *ſecond* was, that the male was mounted on the back of the female, and exerted all his ſtrength with his hinder feet in pulling out the eggs, whilſt his fore feet embraced her breaſt.

" In order to apprehend the manner of his working in the delivery of the female, the reader muſt obſerve, that the paws of theſe animals, as well thoſe of the fore-feet as of the hinder, are divided into ſeveral toes, which can perform the office of fingers.

" It muſt be remarked likewiſe, that the eggs of this ſpecies of toads are included each in a membranous coat that is very firm, in which is contained the embryo; and that theſe eggs, which are oblong and about two lines in length, being faſtened one to another by a ſhort but very ſtrong cord, form a kind of chaplet, the beads of which are diſtant from each other about the half of their length. It is by drawing this cord with his paw that the male performs the function of a midwife, and acquits himſelf in it with a dexterity that one would not expect from ſo lumpiſh an animal.

" The preſence of the obſerver did not a little diſcompoſe the male: for ſome time he ſtopped ſhort, and threw

"Secondly, Instead being dead, I gave few any trouble during my living or ability to move about (o).

"Thirdly, I hardly remember any person taking it up except my father and myself; I do not know whether it had any particular attachment to us.

"Lastly, In respect to its end, I answer this last query. Had it not been for a fatal raven, I make no doubt but it would have been now living; who one day coming at the mouth of its hole, pulled it out, and although I rescued it, pulled out one eye, and hurt it so, that notwithstanding its living a twelvemonth it never recovered it, and had a difficulty of taking its food, missing the mark for want of its eye: before that accident it had all the appearance of perfect health."

6. The rubeta, or matter-jack, frequents dry and sandy places: it is found on Putney common, and also near Revesby abbey, Lincolnshire. It never leaps, neither does it crawl with the slow pace of a toad, but its motion is like to running. Several are found commonly together, and like others of the genus they appear in the evenings. The upper part of the body is of a dirty yellow, clouded with brown, and covered with porous pimples of unequal sizes: on the back is a yellow line. The upper side of the body is of a paler hue, marked with black spots, which are rather rough. On the fore-feet are four divided toes; on the hind five, a little webbed. The length of the body is two inches and a quarter; the breadth, one and a quarter: the length of the fore-legs, one inch one-sixth; of the hind legs, two inches. We are indebted to Sir Joseph Banks, for this account.

7. The pipal, or Surinam toad, is more ugly than even the common one. The body is flat and broad; the head small; the jaws, like those of a mole, are extended, and evidently formed for rooting in the ground: the skin of the neck forms a sort of wrinkled collar: the colour of the head is of a dark chesnut, and the eyes are small: the back, which is very broad, is of a lightish grey, and seems covered over with a number of small eyes, which are round, and placed at nearly equal distances. These eyes are very different from what they seem: they are the animal's eggs, covered with their shells, and placed there for hatching. These eggs are buried deep in the skin, and in the beginning of incubation but just appear; and are very visible when the young animal is about to burst from its confinement. They are of a reddish, shining yellow colour; and the parts between them are full of small warts, resembling

This is their situation previous to their coming forth; but nothing so much demands our admiration as the manner of their production. The eggs, when formed in the ovary, are sent, by some internal canals, which anatomists have not hitherto described, to lie and come to maturity under the bony substance of the back: in this state they are impregnated by the male, whose seed finds its way by pores very singularly contrived, and pierces not only the skin but the periosteum: the skin, however, is still apparently entire, and forms a very thick covering over the whole brood; but as they advance to maturity, at different intervals, one after another, the egg seems to start forward, and burgeons from the back, becomes more yellow, and at last breaks; when the young one puts forth its head: it still, however, keeps its situation until it has acquired a proper degree of strength, and then it leaves the shell, but still continues to keep upon the back of the parent. In this manner the pipal is seen travelling with her wonderous family on her back, in all the different stages of maturity. Some of the strange progeny, not yet come to sufficient perfection, appear quite torpid, and as yet without life in the egg: others seem just beginning to rise through the skin; here peeping forth from the shell, and there having entirely forsaken their prison: some are sporting at large upon the parent's back, and others descending to the ground to try their own fortune below. The male pipal is every way larger than the female, and has the skin less tightly drawn round the body. The whole body is covered with pustules, resembling pearls; and the belly, which is of a bright yellow, seems as if it were sewed up from the throat to the vent, a seam being seen to run in that direction. This animal, like the rest of the frog kind, is most probably harmless. Rana.

8. The water frog of Catesby has large black eyes, yellow irides, and long limbs: the upper part of the head and body is of a dusky green, spotted with black; and from each eye to the nose is a white line; and also a yellow line along the sides to the rump. They frequent rivulets and ditches, which they do not quit for the dry land. It is said they will spring five or six yards at a leap.

9. The rana arborea, or green tree frog of Catesby, is of a slender shape and bright green colour, marked on each side with a line of yellow: the eyes are black; the irides yellow; they have four toes before and five behind; at the end of each toe there is a round membrane, concave beneath, and not unlike the mouth of a leech. They lurk under the lower sides of leaves, even of the tallest trees, and adhere firmly, by means of the membranes at the ends of their toes, sticking to the smoothest surface: a looking-glass was held before one, at

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view on the *latter impertinent* a fixed look that marked his disquietness and fear; but he soon returned to his work with more precipitation than before, and a moment after he appeared undetermined whether he should continue it or not. The female likewise discovered her uneasiness at the sight of the stranger, by motions that interrupted for moments the male in his operation. At length, whether the silence and steady posture of the spectator had dissipated their fear, or that the *case* was urgent, the male resumed his work with the same vigour, and successfully performed his function."

(o) This question arose from an assertion of Linnæus, that the toad delighted in filthy herbs. *Delectatur coitu, aetate, stabulo humido.* The unsightly deformity of the animal seems to be the only ground of this as well as another misrepresentation, of its conveying a poison with its pimples, its touch, and even its breath. *Verrucæ lacteſcentes venenatæ impoſſe tactu, ambuſta*

Ranai ‖ Randolph.

at four yards distance; it reached it at one leap, and stuck closely to it. At night these frogs make an incessant chirping, and leap from spray to spray in search of insects. This species is common to America and the warmer parts of Europe.

10. The land frog of Catesby has much the appearance of a toad: above it is grey or brown, spotted with dusky; below white, faintly spotted; the irides are red; and the legs short. They frequent the high-lands, and are seen most frequently in wet weather and in the hottest time of the day: they leap, feed on insects, particularly the fire-fly and ant. Sometimes the Americans bake and reduce this species to powder, which, mixed with orrice root, is taken as a cure for a tympany.

11. The cinereous frog has a gibbous, cinereous, and smooth back; the belly is yellow and granulated: on each side, from the nose to the rump, there is a white line; and there is the same on the outside of the thighs and legs; the toes are bullated at their ends. They inhabit Carolina.

RANAI, one of the Sandwich islands discovered by Captain Cooke, is about nine miles distant from Mowee and Morotoi, and is situated to the south-west of the passage between those two isles. The country towards the south is elevated and craggy; but the other parts of the island had a better appearance, and seemed to be well inhabited. It abounds in roots, such as sweet potatoes, *taro*, and yams; but produces very few plaintains and bread-fruit trees. The south point of Ranai is in the latitude of 20° 46′ north, and in the longitude of 203° 8′ east.

RANCID, denotes a fatty substance that has become rank or musty, or that has contracted an ill smell by being kept close.

RANDIA, in botany: A genus of the monogynia order, belonging to the pentandria class of plants; and in the natural method ranking with those of which the order is doubtful. The calyx is monophyllous; the corolla salver-shaped; the berry unilocular, with a capsular rind. There are two species, viz. the mitis and aculeata.

RANDOLPH (Thomas), an eminent English poet in the 17th century, was born in Northamptonshire 1605. He was educated at Westminster and Cambridge, and very early distinguished for his excellent genius; for at about nine or ten years of age he wrote the History of the Incarnation of our Saviour in verse. His subsequent writings established his character, and gained him the esteem and friendship of some of the greatest men of that age, particularly of Ben Johnson, who adopted him one of his sons in the muses. He died in 1634, and was honourably interred. He wrote, 1. The Muses Looking-glass, a comedy. 2. Amyntas, or the Impossible Dowry, a pastoral, acted before the king and queen. 3. Aristippus, or the Jovial Philosopher. 4. The Conceited Pedlar. 5. The Jealous Lovers, a comedy. 6. Hey for Honesty, down with Knavery, a comedy; and several poems.

Random ‖ Rank.

RANDOM SHOT, in gunnery, is a shot made when the muzzle of a gun is raised above the horizontal line, and is not designed to shoot directly or point blank.

The utmost random of any piece is about ten times as far as the bullet will go point-blank. The bullet will go farthest when the piece is mounted to about 45° above the level range. See GUNNERY and PROJECTILES.

RANGE, in gunnery, the path of a bullet, or the line it describes from the mouth of the piece to the point where it lodges. If the piece lie in a line parallel to the horizon, it is called the *right* or *level range*: if it be mounted to 45°, it is said to have the *utmost range*; all others between 00 and 45° are called the *intermediate ranges*.

RANGER, a sworn officer of a forest, appointed by the king's letters patent; whose business is to walk through his charge, to drive back the deer out of the purlieus, &c. and to present all trespasses within his jurisdiction at the next forest-court.

RANK, the order or place assigned a person suitable to his quality or merit.

RANK, is a straight line made by the soldiers of a battalion or squadron, drawn up side by side: this order was established for the marches, and for regulating the different bodies of troops and officers which compose an army.

RANK and Precedence, in the British army and navy, are as follow:

Engineers RANK. Chief, as colonel; director, as lieutenant-colonel; sub-director, as major; engineer in ordinary, as captain; engineer extraordinary, as captain-lieutenant; sub-engineer, as lieutenant; practitioner-engineer, as ensign.

Navy RANK. Admiral, or commander in chief of the British fleet, has the rank of a field-marshal; admirals, with their flags on the main-top-mast-head, rank with generals of horse and foot; vice-admirals, with lieutenant-generals; rear-admirals, as major-generals; commodores, with broad pendants, as brigadier-generals; captains of post-ships, after three years from the date of their first commission, as colonels; other captains, as commanding post-ships, as lieutenant-colonels; captains, not taking post, as majors; lieutenants, as captains.

Rank

Ranunculus.

Rank between the Army, Navy, and Governors.

Army.	Navy.	Governors.
General in chief	Admiral in chief	Commander in chief of the forces in America
Generals of horfe	Admiral with a flag at the main-top-maft	Captain-general of provinces
Lieutenant-generals	Vice-Admirals	Lieutenant-generals of provinces
Major-generals	Rear-Admirals	Lieutenant-governors and prefidents
Colonels	Poft-captains of 3 years	Lieutenant-governors not commanding
Lieutenant-colonels	Poft-captains	Governors of charter colonies
Majors	Captains	Deputy-governors
Captains	Lieutenants	Eftablifhed by the king, 1760

Doubling of the Ranks, is the placing two ranks in one, frequently ufed in the manœuvres of a regiment.

Ranks and Files, are the horizontal and vertical lines of foldiers when drawn up for fervice.

RANSOM, a fum of money paid for the redemption of a flave, or the liberty of a prifoner of war. In our law-books, ranfom is alfo ufed for a fum paid for the pardon of fome great offence, and to obtain the offender's liberty.

RANULA, a tumour under a child's tongue, which, like a ligature, hinders it from fpeaking or fucking.

RANUNCULUS, CROWFOOT: A genus of the polygamia order, belonging to the polyandria clafs of plants; and in the natural method ranking under the 26th order, *Multifiliquæ*. The calyx is pentaphyllous; there are five petals, each with a melliferous pore on the infide of the heel; the feeds naked.

Species. There are near 40 different fpecies of this genus, fix or eight of which claim general eſteem as flowery plants for ornamenting the gardens, and a great number are common weeds in the fields, waters, and paſture ground, not having merit for garden culture. Of the garden kinds, the principal fort is the Aſiatic or Turkey and Perſian ranunculus, which compriſes many hundred varieties of large, double, moſt beautiful flowers of various colours: but feveral other fpecies having varieties with fine double flowers, make a good appearance in a collection, though as thoſe of each fpecies conſiſt only of one colour, fome white, others yellow, they are inferior to the Aſiatic ranunculus, which is large, and diverſified a thouſand ways in rich colours, in different varieties. However, all the garden kinds in general effect a very agreeable diverſity in aſſemblage in the flower compartments, &c. and they being all very hardy, ſucceed in any open beds and borders, &c

Culture. The Aſiatic ſpecies in all its varieties will ſucceed in any light, rich, garden earth; but the floriſts often prepare a particular compoſt for the fine varieties, conſiſting of good garden-mould or paſture-earth, ſward and all, a fourth part of rotted cow-dung and the like portion of ſea-ſand; and with this they prepare beds four feet wide and two deep: however, in default of ſuch compoſt, uſe beds of any good light earth of your garden; or, if neceſſary, it may be made light and rich with a portion of drift-ſand and rotten dung, cow-dung is moſt commonly recommended; but they will alſo thrive in beds of well-wrought kitchen-garden earth, and they often proſper well in the common flower-borders.

The ſeaſon for planting the roots is both in autumn and ſpring; the autumn plantings generally flower ſtrongeſt and ſooneſt by a month at leaſt, and are ſucceeded by the ſpring-planting in May and June. Perform the autumnal planting in October and early part of November, but ſome plant towards the latter end of September in order to have a very early bloom; but thoſe planted in that month and beginning of October often come up with rank leaves ſoon after, in winter, ſo as to require protection in hard froſts; thoſe, however, planted about the middle or latter end of October, and beginning of November, rarely ſhoot up ſtrong till towards ſpring, and will not require ſo much care of covering during winter; and the ſpring-planting may be performed the end of January or beginning of February, or as ſoon as the weather is ſettled; they will not require any trouble of covering, and will ſucceed the autumnal plants regularly in bloom, and will flower in good perfection. Thus by two or three different plantings you may obtain a ſucceſſion of theſe beautiful flowers in conſtant bloom from April till the middle of June; but the autumnal plants, for the general part, not only flower ſtrongeſt, but the roots increaſe more in ſize, and furniſh the beſt off-ſets for propagation: it is, however, proper to plant both in ſpring and autumn.

Prepare for the choicer ſorts four-feet beds of light earth, and rake the ſurface ſmooth: then plant the roots in rows lengthwiſe the beds, either by drilling them in two inches deep, and ſix inches diſtance in the row, and the rows ſix or eight aſunder; or you may plant them by bedding-in, or by dibble-planting, the ſame depth and diſtance.

Thoſe deſigned for the borders ſhould be planted generally

Ranunculus || Rape.

nerally towards the ſpring, in little clumps or patches, three, four, or five roots in each, putting them in either with a dibble or trowel, two or three inches deep, and three or four aſunder in each patch, and the patches from about three to five or ten feet diſtance, placing them rather forward in the border.

Propagation. All the varieties of the Aſiatic ranunculus propagate abundantly by off-ſets from the root, and new varieties are gained by ſeed.—1. By off-ſets. The time for ſeparating the off-ſets is in ſummer when the flower is paſt, and the leaves and ſtalks are withered: then taking up all the roots in dry weather, ſeparate the off-ſets from each main root, and after drying the whole gradually in ſome ſhady airy room, put them up in bags till the autumn and ſpring ſeaſons of planting; then plant them as before, placing all the off-ſets in ſeparate beds: many of them will blow the firſt year, but in the ſecond they will all flower in good perfection.—2. By ſeed. Save a quantity of ſeed from the fineſt ſemi-double flowers, and ſow it either in Auguſt, or in March, or April, though, to ſave trouble of winter-covering, ſome prefer the ſpring: it ſhould be ſowed in light rich mould, either in pots or in an eaſt border; drawing very ſhallow flat drills five or ſix inches aſunder, in which ſow the ſeeds thinly, and cover them lightly with earth, giving frequent refreſhments of water in dry weather, and in a month or ſix weeks the plants will riſe with ſmall leaves; obſerving to continue the light waterings in dry weather, to preſerve the ſoil moiſt during their ſummer's growth to increaſe the ſize of the roots; and in June when the leaves decay, take up the roots and preſerve them till the ſeaſon for planting, then plant them in common beds, as before directed, and they will flower the ſpring following, when all the doubles of good properties ſhould be marked, and the ſingles thrown away.

The juice of many ſpecies of ranunculus is ſo acrid as to raiſe bliſters on the ſkin, and yet the roots may be eaten with ſafety when boiled.

RAPACIOUS ANIMALS, are ſuch as live upon prey.

RAPE, in law, the carnal knowledge of a woman forcibly and againſt her will. This, by the Jewiſh law, was puniſhed with death, in caſe the damſel was betrothed to another man: and, in caſe ſhe was not betrothed, then a heavy fine of fifty ſhekels was to be paid to the damſel's father, and ſhe was to be the wife of the raviſher all the days of his life; without that power of divorce, which was in general permitted by the Moſaic law.

The civil law puniſhes the crime of raviſhment with death and confiſcation of goods: under which it includes both the offence of forcible abduction, or taking away a woman from her friends; and alſo the preſent offence of forcibly diſhonouring her; either of which, without the other, is in that law ſufficent to conſtitute a capital crime. Alſo the ſtealing away a woman from her parents or guardians, and debauching her, is equally penal by the emperor's edict, whether ſhe conſent or is forced. And this, in order to take away from women every opportunity of offending in this way; whom the Roman laws ſuppoſe never to go aſtray without the ſeduction and arts of the other ſex; and therefore, by reſtraining and making ſo highly penal the ſolicitations of the men, they meant to ſecure effectually the honour of the women. But the Engliſh law does not entertain quite ſuch ſublime ideas of the honour of either ſex, as to lay the blame of a mutual fault upon one of the tranſgreſſors only; and therefore makes it a neceſſary ingredient in the crime of rape, that it muſt be againſt the woman's will. Rape

Rape was puniſhed by the Saxon laws, particularly thoſe of king Athelſtan, with death; which was alſo agreeable to the old Gothic or Scandinavian conſtitution. But this was afterwards thought too hard: and in its ſtead another ſevere, but not capital, puniſhment was inflicted by William the Conqueror, viz. caſtration and loſs of eyes; which continued till after Bracton wrote, in the reign of Henry III. But in order to prevent malicious accuſations, it was then the law (and, it ſeems, ſtill continues to be ſo in appeals of rape), that the woman ſhould, immediately after, go to the next town, and there make diſcovery to ſome credible perſons of the injury ſhe has ſuffered; and afterwards ſhould acquaint the high conſtable of the hundred, the coroners, and the ſheriff, with the outrage. This ſeems to correſpond in ſome degree with the laws of Scotland and Arragon, which require that complaint muſt be made within 24 hours: though afterwards by ſtatute Weſtm. 1. c. 13. the time of limitation in England was extended to 40 days. At preſent there is no time of limitation fixed: for, as it is uſually now puniſhed by indictment at the ſuit of the king, the maxim of law takes place, that "nullum tempus occurrit regi:" but the jury will rarely give credit to a ſtale complaint. During the former period alſo it was held for law, that the woman (by conſent of the judge and her parents) might redeem the offender from the execution of his ſentence, by accepting him for her huſband; if he alſo was willing to agree to the exchange, but not otherwiſe.

In the 3 Edw. I. by the ſtatute Weſtm. 1. c. 13. the puniſhment of rape was much mitigated: the offence itſelf, of raviſhing a damſel within age, (that is, twelve years old) either with her conſent or without, or of any other woman againſt her will, being reduced to a treſpaſs, if not proſecuted by appeal within 40 days, and ſubjecting the offender only to two years impriſonment, and a fine at the king's will. But this lenity being productive of the moſt terrible conſequences, it was in ten years afterwards, 13 Edw. I. found neceſſary to make the offence of forcible rape felony by ſtatute Weſtm. 2. c. 34. And by ſtatute 18 Eliz. c. 7. it is made felony without benefit of clergy: as is alſo the abominable wickedneſs of carnally knowing or abuſing any woman-child under the age of ten years; in which caſe the conſent or non-conſent is immaterial, as by reaſon of her tender years ſhe is incapable of judgment and diſcretion. Sir Matthew Hale is indeed of opinion, that ſuch profligate actions committed on an infant under the age of twelve years, the age of female diſcretion by the common law, either with or without conſent, amount to rape and felony; as well ſince as before the ſtatute of queen Elizabeth: but that law has in general been held only to extend to infants under ten; though it ſhould ſeem that damſels between ten and twelve are ſtill under the protection of the ſtatute Weſtm. 1. the law with reſpect to their ſeduction not having been altered by either of the ſubſequent ſtatutes.

A male infant, under the age of fourteen years, is pre-

Rape, Raphael.

[illegible] presumed by Law incapable to commit a rape, and therefore it seems cannot be found guilty of it. For to it, as to other felonies, "malitia supplet ætatem;" yet, as to this particular species of felony, the law supposes an imbecility of body as well as mind.

The civil law seems to suppose a prostitute or common harlot incapable of any injuries of this kind: not allowing any punishment for violating the chastity of her, who hath indeed no chastity at all, or at least hath no regard to it. But the law of England does not judge so hardly of offenders, as to cut off all opportunity of retreat even from common strumpets, and to treat them as never capable of amendment. It therefore holds it to be felony to force even a concubine or harlot; because the woman may have forsaken that unlawful course of life: for, as Bracton well observes, "licet meretrix fuerit antea, certe tunc temporis non fuit, cum reclamando a quibis ejus consentire noluit."

As to the material facts requisite to be given in evidence and proved upon an indictment of rape, they are of such a nature, that, though necessary to be known and settled, for the conviction of the guilty and preservation of the innocent, and therefore are to be found in such criminal treatises as discourse of these matters in detail, yet they are highly improper to be publickly discussed, except only in a court of justice. We shall therefore merely add upon this head a few remarks from Sir Matthew Hale, with regard to the competency and credibility of witnesses; which may, *salvo pudore* be considered.

And, first, the party ravished may give evidence upon oath, and is in law a competent witness; but the credibility of her testimony, and how far forth she is to be believed, must be left to the jury upon the circumstances of fact that concur in that testimony. For instance: if the witness be of good fame; if she presently discovered the offence, and made search for the offender; if the party accused fled for it; these and the like are concurring circumstances, which give greater probability to her evidence. But, on the other side, if she be of evil fame, and stand unsupported by others; if she concealed the injury for any considerable time after she had opportunity to complain; if the place, where the fact was alleged to be committed, was where it was possible she might have been heard, and she made no outcry: these and the like circumstances carry a strong, but not conclusive, presumption that her testimony is false or feigned.

Moreover, if the rape be charged to be committed on an infant under 12 years of age, she may still be a competent witness, if she hath sense and understanding to know the nature and obligations of an oath; and, even if she hath not, it is thought by Sir Matthew Hale, that she ought to be heard without oath, to give the court information; though that alone will not be sufficient to convict the offender. And he is of this opinion, first, Because the nature of the offence being secret, there may be no other possible proof of the actual fact; though afterwards there may be concurrent circumstances to corroborate it, proved by other witnesses: and, secondly, Because the law allows what the child told her mother, or other relations, to be given in evidence, since the nature of the case admits frequently of no better proof; and there is much more reason for the court to hear the narration of the child herself, than to receive it at second-hand from those who swear they heard her say so. And indeed it seems now to be settled, that in these cases infants of any age are to to be heard; and, if they have any idea of an oath, to be also sworn: it being found by experience, that infants of very tender years often give the clearest and truest testimony. But in any of these cases, whether the child be sworn or not, it is to be wished, in order to render her evidence credible, that there should be some concurrent testimony of time, place, and circumstances, in order to make out the fact; and that the conviction should not be grounded singly on the unsupported accusation of an infant under years of discretion. There may be therefore, in many cases of this nature, witnesses who are competent, that is, who may be admitted to be heard; and yet, after being heard, may prove not to be credible, or such as the jury is bound to believe. For one excellence of the trial by jury is, that the jury are triers of the credit of the witnesses, as well as of the truth of the fact.

"It is true (says this learned judge), that rape is a most detestable crime, and therefore ought severely and impartially to be punished with death; but it must be remembered, that it is an accusation easy to be made, hard to be proved, but harder to be defended by the party accused, though innocent." He then relates two very extraordinary cases of malicious prosecution for this crime that had happened within his own observation; and concludes thus: "I mention these instances, that we may be the more cautious upon trials of offences of this nature, wherein the court and jury may with so much ease be imposed upon, without great care and vigilance; the heinousness of the offence many times transporting the judge and jury with so much indignation, that they are over-hastily carried to the conviction of the persons accused thereof, by the consistent testimony of sometimes false and malicious witnesses."

RAPHAEL (D'Urbino), the greatest, most sublime, and most excellent painter that has appeared, since the revival of the fine arts, was the son of an indifferent painter named *Sanzio*, and was born at Urbino on Good Friday 1482. The popes Julius II. and Leo X. who employed him, loaded him with wealth and honour; and it is said that cardinal De St Bibiana had such a value for him that he offered him his niece in marriage. His genius is admired in all his pictures; his contours are free, his ordonnances magnificent, his designs correct, his figures elegant, his expressions lively, his attitudes natural, his heads graceful; in fine, every thing is beautiful, grand, sublime, just and adorned with graces. These various perfections he derived not only from his excellent abilities, but from his study of antiquity and anatomy; and from the friendship he contracted with Ariosto, who contributed not a little to the improvement of his taste. His pictures are principally to be found in Italy and Paris. That of the Transfiguration, preserved at Rome in the church of St Peter Monterio, passes for his master-piece. He had a handsome person, was well proportioned, and had great sweetness of temper; was polite, affable, and modest,

Raphaim || Raphidia.

deſt. He, however, lived in the utmoſt ſplendor; moſt of the eminent maſters of his time were ambitious of working under him; and he never went out without a crowd of artiſts and others, who followed him purely through reſpect. He was not only the beſt painter in the world, but perhaps the beſt architect too; on which account Leo X. charged him with building St Peter's church at Rome: but he was too much addicted to pleaſure, which occaſioned his death at 37 years of age. He left a great number of diſciples; among whom were Julio Romano and John Francis Penni, who were his heirs. Many able engravers, as Raimondi, George Mantuan, and Bloemart, engraved after Raphael. See PAINTING, p. 595 and 598.

RAPHAIM, or REPHAIM, (Moſes, a name ſignifying *Giants*, as they really were, and an actual people too, ſituated in Baſan or Batanea, beyond Jordan, ſeparated from the Zamzummim by the river Jabbok. Alſo a valley near Jeruſalem; Joſhua x.

RAPHANUS, RADISH; a genus of the ſiliquoſa order belonging to the tetradynamia claſs of plants; and in the natural method ranking under the 39th order, *Siliquoſæ*. The calyx is cloſe; the ſiliqua toroſe, or ſwelling out in knots, ſubarticulated, and round. There are two melliferous glandules between the ſhorter ſtamina and the piſtil, and two between the longer ſtamina and the calyx.

There is only one ſpecies, viz. the ſativus, or common garden radiſh; of which there are ſeveral varieties. They are annual plants, which being ſowed in the ſpring, attain perfection in two or three months, and ſhoot up ſoon after into ſtalk for flower and ſeed, which, ripening in autumn, the whole plant, root and top, periſhes; ſo that a freſh ſupply muſt be raiſed annually from ſeed in the ſpring, performing the ſowings at ſeveral different times, from about Chriſtmas until May, in order to continue a regular ſucceſſion of young tender radiſhes throughout the ſeaſon: allowing only a fortnight or three weeks interval between the ſowings; for one crop will not continue good longer than that ſpace of time, before they will either run to ſeed, or become tough, ſticky, and too hot to eat.

RAPHANIDOSIS, a puniſhment inflicted at Athens upon adulterers. The manner of it was this: The hair was plucked off from the privates of the offender, hot aſhes laid upon the place, and a radiſh or mullet thruſt up his fundament, as has been mentioned under ADULTERY. To this Juvenal alludes, *Sat.* x. ver. 317. *Quoſdam mœchos et mugilis intrat.* Perſons who had been thus puniſhed were called ευπροκτοι. The word *raphanidoſis* is derived from ραφανις, a radiſh.

RAPHIDIA, in zoology; a genus of inſects, of the neuroptera order; the characters of which are theſe: The head is of a horny ſubſtance, and depreſſed or flattened: the mouth is armed with two teeth, and furniſhed with four palpi: the ſtemmata are three in number: the wings are deflected: the antennæ are filiform, as long as the thorax; the anterior part of which is lengthened out, and of a cylindrical form: the tail of the female is terminated by an appendix, reſembling a flexible crooked briſtle.—There are three ſpecies. The moſt remarkable is the ophiopſis; which for its ſhape is one of the moſt ſingular that can be ſeen †. It has an oblong head, ſhaped like a heart, with its point joined to the thorax, and the broad part before. It is ſmooth, black, flattened, continually ſhaking, with ſhort antennæ, yellowiſh maxillæ, and four palpi. Towards the middle of the upper part of the head, between the eyes, are the three ſtemmata, placed in a triangle. The thorax, to which this head is faſtened, is narrow, long, and cylindrical. The abdomen, broader, is black like the reſt of the body, with the ſegments margined yellow. The feet are of a yellowiſh caſt. The wings, which are faſtigiated, are white, diaphanous, veined, and as it were covered with a very fine net-work of black. This inſect, in The figure of its head, reſembles a ſnake. It is found but ſeldom, and in woods only. Its larva, chryſalis, and habitation, are abſolutely unknown.

Rapier, Rapin.

RAPIER, formerly ſignified a long old-faſhioned ſword, ſuch as thoſe worn by the common ſoldiers: but it now denotes a ſmall ſword, as contradiſtinguiſhed from a back-ſword.

RAPIN (Rene), a Jeſuit and eminent French writer, was born at Tours in 1621. He taught polite literature in the ſociety of the Jeſuits with great applauſe, and was juſtly eſteemed one of the beſt Latin poets and greateſt wits of his time. He died at Paris in 1687. He wrote, 1. A great number of Latin poems, which have rendered him famous throughout all Europe; among which are his *Hortorum libri quatuor*, which is reckoned his maſter-piece. 2. Reflections on Eloquence, Poetry, Hiſtory, and Philoſophy. 3. Compariſons between Virgil and Homer, Demoſthenes and Cicero, Plato and Ariſtotle, Thucydides and Titus Livius. 4. The hiſtory of Janſeniſm. 5. Several works on religious ſubjects. The beſt edition of his Latin poems is that of Paris in 1723, in 3 vols 12mo.

RAPIN *de Thoyras* (Paul de), a celebrated hiſtorian, was the ſon of James de Rapin lord of Thoyras, and was born at Caſtres in 1661. He was educated at firſt under a tutor in his father's houſe; and afterwards ſent to Puylaurens, and thence to Saumur. In 1679 he returned to his father, with a deſign to apply himſelf to the ſtudy of the law, and was admitted an advocate: but ſome time after, reflecting that his being a Proteſtant would prevent his advancement at the bar, he reſolved to quit the profeſſion of the law, and apply himſelf to that of the ſword; but his father would not conſent to it. The revocation of the edict of Nantes in 1685, and the death of his father, which happened two months after, made him reſolve to go to England; but as he had no hopes of any ſettlement there, his ſtay was but ſhort. He therefore ſoon after went to Holland, and liſted himſelf in the company of French volunteers at Utrecht, commanded by M. Rapin his couſin-german. He attended the Prince of Orange into England in 1688: and the following year the Lord Kingſton made him an enſign in his regiment, with which he went into Ireland, where he gained the eſteem of his officers at the ſiege of Carrickfergus, and had ſoon a lieutenant's commiſſion. He was preſent at the battle of the Boyne, and was ſhot thro' the ſhoulder at the ſiege of Limerick. He was ſoon after captain of the company in which he had been enſign; but, in 1693, reſigned his company to one of his brothers, in order to be tutor to the earl of Portland's ſon.

† Plate CCCCXXXV.

Rapine. Ras-el-Feel.

ſon. In 1699, he married Marianne Tellard, ; but this marriage neither abated his care of his pupil nor prevented his accompanying him in his travels. Having finiſhed this employment, he returned to his family, which he had ſettled at the Hague ; and here he continued ſome years. But as he found his family increaſe, he reſolved to retire to ſome cheap country ; and accordingly removed, in 1707, to Weſel, where he wrote his Hiſtory of England, and ſome other pieces. Though he was of a ſtrong conſtitution, yet ſeventeen years application (for ſo long was he in compoſing the hiſtory juſt mentioned) entirely ruined his health. He died in 1725. He wrote in French, 1. A Diſſertation on the Whigs and Tories. 2. His Hiſtory of England, printed at the Hague in 1726 and 1727, in 9 vols 4to, and reprinted at Trevoux in 1728, in 10 vols 4to. This laſt edition is more complete than that of the Hague. It has been tranſlated into Engliſh, and improved with Notes, by the Reverend Mr Tindal, in 2 vols folio. This performance, though the work of a foreigner, is deſervedly eſteemed as the fulleſt and moſt impartial collection of Engliſh political tranſactions extant. The readers of wit and vivacity, however, may be apt to complain of him for being ſometimes rather tedious and dull.

RAPINE, in law, the taking away another's goods &c. by violence.

RAPPERSWIL, a town of Swiſſerland, on the confines of the canton of Zurich, and of the territory of Gaſter, with an old caſtle It is ſtrong by ſituation, being ſeated on a neck of land which advances into the lake of Zurich, and over which there is a bridge 850 paces long. It is ſubject to the cantons of Zurich and Berne. E. Long. 8. 57. N. Lat. 47. 20.

RAPP OLSTEIN, a town of France in Upper Alſace, which, before the Revolution, had the title of a barony. All the muſicians of Alſace likewiſe depended upon this baron, and were obliged to pay him a certain tribute, without which they could not play upon their inſtruments. E. Long. 7. 28. N. Lat. 48. 15.

RAPTURE, an eccſtaſy or tranſport of mind. See Extasy.

RARE, in phyſics, ſtands oppoſed to denſe ; and denotes a body that is very porous, whoſe parts are at a great diſtance from one another, and which is ſuppoſed to contain but little matter under a large bulk. See the following article.

RAREFACTION, in phyſics, the act whereby a body is rendered rare ; that is, brought to poſſeſs more room, or appear under a larger bulk, without acceſſion of any new matter.—This is very frequently the effect of fire, as has long been univerſally allowed. In many caſes, however, philoſophers have attributed it to the action of a repulſive principle. However, from the many diſcoveries concerning the nature and properties of the electric fluid and fire, there is the greateſt reaſon to believe, that this repulſive principle is no other than elementary fire. See Repulsion.

RAS EL-FEEL, one of the frontier provinces of Abyſſinia, of which the late celebrated traveller Mr Bruce was made governor while in that country. It is but of ſmall extent, and in its moſt proſperous ſtate contained only 39 villages. The climate is extremely hot, in Mr Bruce's opinion one of the hotteſt in the world. He informs us, that on the firſt day of March, at three o'clock in the afternoon, the thermometer ſtood at 114° in the ſhade, and in the evening at 82° ; though at ſunriſe it had been no higher than 61. Notwithſtanding this appearance of extreme heat, however, the ſenſation was by no means intolerable ; they could hunt at mid-day, and felt the evenings rather cold. The ſoil is a fat, looſe, black earth, which our author ſays is the ſame from 13° to 16° of north latitude ; at leaſt till we come to the deſerts of Atbara, where the tropical rains ceaſe. This country divides that of the Shangalla into two parts, nearly equal. Theſe people inhabit a belt of land about 60 miles broad, all along the northern frontier of Abyſſinia, excepting two large gaps or ſpaces which have been left open for the ſake of commerce, and which are inhabited by ſtrangers, to keep the Shangalla in awe. The latter trade in gold, which they pick up in the ſtreams as it is waſhed down from the mountains ; for there are no mines in their country, neither is there any gold in Abyſſinia, excepting what is imported from this or ſome other country. The Shangalla are the natural enemies of the inhabitants of Ras-el-Feel, and much blood has been ſhed in the various incurſions they have made upon one another ; though of late thoſe of Ras-el-Feel, by the aſſiſtance of the emperors, have been enabled to keep the Shangalla at bay.

Ras-Sem, Raſay.

RAS-Sem, a city of Tripoli in Barbary, concerning which a number of fables were told by the Tripoline ambaſſador, all of which were believed in England and other parts of Europe in the begnning of this century. (See *Petrified-City*). Mr Bruce informs us, that it is ſituated about five days journey ſouth from Bengazi; but has no water excepting one fountain, which has a diſagreeable, taſte, and ſeems to be impregnated with alum. Hence it has obtained the name of *Ras-Sem*, or the fountain of poiſon. The only remains of antiquity in this place conſiſt of the ruins of a tower or fortification, which, in the opinion of Mr Bruce, is as late as the time of the Vandals; but he ſays he cannot imagine what uſe they made of the water, and they had no other within two days journey of the place.—Here our traveller ſaw many of the animals called *jerboa*, a kind of mice ; which, he ſays, ſeem to partake as much of the nature of a bird as of a quadruped.

RASAY, one of the Hebrides Iſlands, is about 13 miles long and 2 broad. It contains 700 inhabitants, has plenty of lime-ſtone, free-ſtone ; and feeds great numbers of black cattle ; but has neither deers, hares, nor rabbits. The only appearance of a harbour in Raſay is at Clachan Bay, where Mr Macleod the proprietor of the iſland reſides. Raſay preſents a bold ſhore, which riſes to the height of mountains ; and here the natives have, with incredible labour, formed many little corn fields and potato grounds. Theſe heights decreaſe at the ſouth end, where there are ſome farms and a good-looking country. Mr Macleod is ſole porprietor of this iſland, and of Rona and Fladda at the north end of it, which are only proper for grazing.

The houſe of Raſay is pleaſantly ſituated near the ſouth-weſt end of the iſland, which is the moſt level part of it. It has an extenſive and excellent garden, and is ſurrounded with foreſt trees of conſiderable magnitude ; another proof that trees will grow upon the edge of the ſea, though it muſt be allowed that the channel

Raſcians || Raſtenburg.

channel here is narrow. Immediately behind the houſe of Raſay are the ruins of an ancient chapel, now uſed as the family burying-place.

Dr Johnſon, in his Tour, expreſſes the higheſt ſatisfaction at the reception he met with when in Raſay from Mr Macleod.

RASCIANS, a poor oppreſſed people who dwelt on both ſides of the Danube, and who, about the year 1594, being weary of the Turkiſh thraldom, firſt took 13 of their veſſels upon that river; and then drawing together a body of fifteen thouſand men between Buda and Belgrade, twice defeated the pâſhâ of Temeſwar with a body of fourteen thouſand Turks. They afterwards took Baczkerek, four miles from Belgrade, and the caſtle of Ottadt; then laying ſiege to that of Beche, on the Theyſſa, the old pâſhâ of Temeſwar marched to relieve it with eleven thouſand men; but the Raſcians encountering them, ſlew near ten thouſand, and took 18 pieces of canon. The conſequence of this victory was the reduction of Werſetza and Luts. Then, ſending to the archduke for aid and gunners, they offered to put themſelves and their country under the emperor's protection.

RASOR-BILL. See ALCA, n° 4.

Rasor-Fiſh. See SOLEN.

RASTALL (John), a printer and miſcellaneous writer, was born in London, probably about the end of the 15th century, and educated at Oxford. Returning from the univerſity, he ſettled in the metropolis, and commenced printer, "then eſteemed (ſays Wood) a profeſſion fit for any ſcholar or ingenious man." He married the ſiſter of Sir Thomas More, with whom, we are told, he was very intimate, and whoſe writings he ſtrenuouſly defended. From the title-page of one of his books, he appears to have lived in Cheapſide, at the ſign of the mermaid. He died in the year 1536; and left two ſons, William and John: the firſt of whom became a judge in queen Mary's reign, and the latter a juſtice of peace. This John Raſtall, the ſubject of the preſent article, was a zealous Papiſt; but Bale ſays, that he changed his religion before his death. He wrote, 1. *Natura naturata.* Pits calls it a copious *(prolixa)* and ingenious comedy, deſcribing Europe, Aſia, and Africa; with cuts. What ſort of a comedy this was, is not eaſy to conceive. Probably it is a coſmographical deſcription, written in dialogue, and therefore ſtyled a *comedy.* 2. The paſtyme of the people; the cronycles of diverſe realmys, and moſt eſpecially of the realm of England, brevely compiled and emprinted in Cheapeſyde, at the ſign of the mearmaid, next Pollyſgate, *cum privilegio*, fol. 3. *Eccleſia Johannis Raſtall*, 1542. Was one of the prohibited books in the reign of Henry VIII. 4. *Legum Anglicanarum vocabula explicata.* French and Latin. Lond. 1567, 8vo. And ſome other works.

RASTADT, a town of Germany, in the circle of Suabia and marquiſate of Baden, with a handſome caſtle. It is remarkable for a treaty concluded here between the French and Imperialiſts in 1714; and is ſeated on the river Merg, near the Rhine. E. Long. 9. 14. N. Lat. 48. 52.

RASTENBURG, a fine city in Pruſſia, on the Guber, ſurrounded with a wall, and ſince 1629 alſo with a rampart.

RAT, in zoology. See MUS.

Rat.

The following receipt is ſaid to have been found effectual for the deſtruction of rats. Take of the ſeeds of ſtaveſacre or louſewort, powdered, more or leſs as the occaſion requires, one part; of oat-meal, three parts; mix them well, and make them up into a paſte with honey. Lay pieces of it in the holes, and on the places where mice and rats frequent; and it will effectually kill or rid the place of thoſe kind of vermin by their eating thereof.

Some time ago, the ſociety for encouraging arts propoſed a premium of 50 l. for a preparation capable of alluring or faſcinating rats ſo that they might be taken alive. In conſequence of this, a great number of new traps, &c. were invented; and the following methods of alluring the rats to a certain place were publiſhed.

One of thoſe moſt eaſily and efficaciouſly practiſed is the trailing ſome pieces of their moſt favourite food, which ſhould be of the kind that has the ſtrongeſt ſcent, ſuch as toaſted cheeſe or broiled red herrings, from the holes or entrances of the cloſet to their receſſes in every part of the houſe or contiguous building. At the extremities and in different parts of the courſe of this trailed track, ſmall quantities of meal, or any other kind of their food, ſhould be laid, to bring the greater number into the tracks, and to encourage them to purſue it to the place where they are intended to be taken: at that place, when time admits of it, a more plentiful repaſt is laid for them, and the trailing repeated for two or three nights.

Beſides this trailing and way-baiting, ſome of the moſt expert of the rat-catchers have a ſhorter and perhaps more effectual method of bringing them together; which is the calling them, by making ſuch a whiſtling noiſe as reſembles their own call; and by this means, with the aſſiſtance of the way-baits, they call them out of their holes, and lead them to the repaſt prepared for them at the place deſigned for taking them. But this is much more difficult to be practiſed than the art of trailing; for the learning the exact notes or cries of any kind of beaſts or birds, ſo as to deceive them, is a peculiar talent which is ſeldom attained: though ſome perſons have been known who could call together a great number of cats; and there was a man in London who could bring nightingales, when they were within hearing, about him, and even allure them to perch on his hand, ſo as to be taken.

In practiſing either of thoſe methods, of trailing or calling, great caution muſt be uſed by the operator to ſuppreſs and prevent the ſcent of his feet and body from being perceived; which is done by overpowering that ſcent by others of a ſtronger nature. In order to this, the feet are to be covered with cloths rubbed over with aſafœtida, or other ſtrong-ſmelling ſubſtances; and even oil of rhodium is ſometimes uſed for this purpoſe, but ſparingly, on account of its dearneſs, though it has a very alluring as well as diſguiſing effect. If this caution of avoiding the ſcent of the operator's feet, near the track, and in the place where the rats are propoſed to be collected, be not properly obſerved, it will very much obſtruct the ſucceſs of the attempt to take them; for they are very ſhy of coming where the ſcent of human feet lies very freſh, as it intimates to their ſagacious inſtinct the preſence of human creatures, whom they

naturally dread. To the above-mentioned means of allurring by trailing, way-baiting, and calling, is added another of a very material efficacy, which is, the use of oil of rhodium, which, like the marum Syriacum in the case of cats, has a very extraordinary fascinating power on these animals. This oil is extremely dear, and therefore sparingly used. It is exalted in a small quantity in the place, and at the entrance of it, where the rats are intended to be taken; particularly at the time when they are to be last brought together, in order to their destruction; and it is used also by smearing it on the surface of some of the implements used in taking by the method below described; and the effect it has in taking off their caution and dread, by the delight they appear to have in it, is very extraordinary.

It is usual, likewise, for the operator to disguise his figure as well as scent, which is done by putting on a sort of gown or cloak, of one colour, that hides the natural form, and makes him appear like a post or some such inanimate thing; which habit must likewise be scented as above, to overpower the smell of his person; and besides this, he is to avoid all motion till he has secured his point of having all the rats in his power.

When the rats are thus enticed and collected, where time is afforded, and the whole in any house and outbuildings are intended to be cleared away, they are suffered to regale on what they most like, which is ready prepared for them, and then to go away quietly for two or three nights; by which means those that are not allured the first night are brought afterwards, either by their fellows, or the effects of the trailing, &c. and will not fail to come duly again, if they are not disturbed or molested. But many of the rat-catchers make shorter work, and content themselves with what can be brought together in one night or two; but this is never effectual, unless where the building is small and entire, and the rats but few in number.

The means of taking them, when they are brought together, are various. Some entice them into a very large bag, the mouth of which is sufficiently capacious to cover nearly the whole floor of the place where they are collected; which is done by smearing some vessel, placed in the middle of the bag, with oil of rhodium, and laying in the bag baits of food. This bag, which before lay flat on the ground with the mouth spread open, is to be suddenly closed when the rats are all in. Others drive or fright them, by slight noises or motions, into a bag of a long form, the mouth of which, after all the rats are come in, is drawn up to the opening of the place by which they entered, all other ways of retreat being secured. Others, again, intoxicate or poison them, by mixing with the repast prepared for them the coculus Indicus, or the nux vomica. They direct four ounces of the coculus Indicus, with twelve ounces of oatmeal, and two ounces of treacle or honey, made into a moist paste with strong-beer: but if the nux vomica be used, a much less proportion will serve than is here given of the coculus. Any similar composition of these drugs, with that kind of food the rats are most fond of, and which has a strong flavour, to hide that of the drugs, will equally well answer the end. If indeed the coculus Indicus be well powdered, and infused in strong beer for some time, at least half the quantity here directed will serve as well as the quautity before-mentioned. When the rats appear to be thoroughly intoxicated with the coculus, or sick with the nux vomica, they may be taken with the hand, and put into a bag or cage, the door of the place being first drawn to, lest those who have strength and sense remaining escape.

Rat-Island || Rates.

Rat-Island, a small detached part of the island of Lundy, off the north coast of Devon. Though noted in Donn's map of the county, it is not worth mention here, but as giving opportunity to subjoin a farther notice of Lundy, which island was purchased a few years since by Mr Cleveland M. P. for about 1200 guineas, who has a small villa on it: not more than 400 acres are cultivated: it is let altogether for 70 l. a year. The soil is good, though no trees will grow on the island. It has fine springs of water: the houses are seven: the inhabitants, men, women, and children, do not exceed 24. The bird called *murr*, whose eggs are very large and fine, the Lundy parrot, and rabbits, are the chief produce; these abound, and are taken for the feathers, eggs, and skins, principally. They have now (1794) 70 bullocks and 400 sheep, but the latter do not thrive. They pay no taxes: fishing skiffs often call with necessaries: the situation is very pleasant, and the rocks around, which are large, and partly granite, are wild, romantic, and novel. It had probably more inhabitants once, as human bones have been ploughed up. It has no place of worship, nor public-house; but strangers are always welcome. Eight cannon lie on the battlements on the top of a very steep precipice, under which is a curious cavern. Lord Gower, Mr Benson, and Sir J. B. Warren, K. B. have been former proprietors. See LUNDY.

Rat-Tails, or *Arrests*. See FARRIERY, § xxxvii.

RATAFIA, a fine spirituous liquor, prepared from the kernels, &c. of several kinds of fruits, particularly of cherries and apricots.

Ratafia of cherries is prepared by bruising the cherries, and putting them into a vessel wherein brandy has been long kept; then adding to them the kernels of cherries, with strawberries, sugar, cinnamon, white pepper, nutmeg, cloves; and to 20 pound of cherries 10 quarts of brandy. The vessel is left open ten or twelve days, and then stopped close for two months before it be tapped. Ratafia of apricots is prepared two ways, viz. either by boiling the apricots in white-wine, adding to the liquor an equal quantity of brandy, with sugar, cinnamon, mace, and the kernels of apricots; infusing the whole for eight or ten days; then straining the liquor, and putting it up for use: or else by infusing the apricots, cut in pieces, in brandy, for a day or two, passing it through a straining bag, and then putting in the usual ingredients.

RATCH, or RASH, in clock-work, a sort of wheel having twelve fangs, which serve to lift up the detents every hour, and make the clock strike. See CLOCK.

RATCHETS, in a watch, are the small teeth at the bottom of the fusy, or barrel, which stops it in winding up.

RATE, a standard or proportion, by which either the quantity or value of a thing is adjusted.

RATES, in the navy, the orders or classes into which the ships of war are divided, according to their force and magnitude.

The regulation, which limits the rates of men of war to the smallest, number possible, seems to have been dictated by considerations of political economy, or of that of

Rates. of the ſimplicity of the ſervice in the royal dock-yards. The Britiſh fleet is accordingly diſtributed into ſix rates, excluſive of the inferior veſſels that uſually attend on naval armaments; as ſloops of war, armed ſhips, bomb-ketches, fire-ſhips and cutters, or ſchooners commanded by lieutenants. Rates.

Ships of the firſt rate mount 100 cannon, having 42-pounders on the lower deck, 24-pounders on the middle deck, 12-pounders on the upper deck, and 6-pounders on the quarter-deck and fore-caſtle. They are manned with 850 men, including their officers, ſeamen, marines, and ſervants.

In general, the ſhips of every rate, beſides the captain, have the maſter, the boatſwain, the gunner, the chaplain, the purſer, the ſurgeon, and the carpenter; all of whom, except the chaplain, have their mates or aſſiſtants, in which are comprehended the ſail-maker, the maſter at arms, the armourer, the captain's clerk, the gunſmith, &c.

The number of other officers are always in proportion to the rate of the ſhip. Thus a firſt rate has ſix lieutenants, ſix maſter's mates, twenty-four midſhipmen, and five ſurgeon's mates, who are conſidered as gentlemen: beſides the following petty officers; quarter-maſters and their mates, fourteen; boatſwain's mates and yeomen, eight; gunner's mates and aſſiſtants, ſix; quarter-gunners, twenty-five; carpenter's mates, two, beſides fourteen aſſiſtants; with one ſteward, and ſteward's mate to the purſer.

If the dimenſions of all ſhips of the ſame rate were equal, it would be the ſimpleſt and moſt perſpicuous method to collect them into one point of view in a table: but as there is no invariable rule for the general dimenſions. We muſt content ourſelves with but a few remarks on ſhips of each rate, ſo as to give a general idea of the difference between them.

The Victory, one of the laſt built of the Britiſh firſt rates, is 222 feet 6 inches in length, from the head to the ſtern; the length of her keel, 151 feet 3 inches; that of her gun-deck, or lower deck, 186 feet; her extreme breadth is 51 feet 10 inches; her depth in the hole, 21 feet 6 inches; her burden, 2162 tons; and her poop reaches 6 feet before the mizen-maſt.

Ships of the ſecond rate carry 90 guns upon three decks, of which thoſe on the lower battery are 32-pounders; thoſe on the middle, 18-pounders; on the upper deck, 12-pounders; and thoſe on the quarter-deck, 6-pounders, which uſually amount to four or ſix. Their complement of men is 750, in which there are ſix lieutenants, four maſter's mates, 24 midſhipmen, and four ſurgeon's mates, 14 quarter-maſters and their mates, eight boatſwain's mates and yeomen, ſix gunner's mates and yeomen, with 22 quarter-gunners, two carpenter's mates, with 10 aſſiſtants, and one ſteward and ſteward's mate.

Ships of the third rate carry from 64 to 80 cannon, which are 32, 18, and 9-pounders. The 80-gun ſhips however begin to grow out of repute, and to give way to thoſe of 74, 70, &c. which have only two whole batteries; whereas the former have three, with 28 guns planted on each, the cannon of their upper deck being the ſame as thoſe on the quarter-deck and fore-caſtle of the latter, which are 9-pounders. The complement in a 74 is 650, and in a 64, 500 men; having, in peace, four lieutenants, but in war, five; and when an admiral is aboard, ſix. They have three maſter's mates, 16 midſhipmen, three ſurgeon's mates, 10 quarter-maſters and their mates, ſix boatſwain's mates and yeomen, four gunner's mates and yeomen, with 18 quarter-gunners, one carpenter's mate, with eight aſſiſtants, and one ſteward and ſteward's mate under the purſer.

Ships of the fourth rate mount from 60 to 50 guns, upon two decks, and the quarter-deck. The lower tier is compoſed of 24-pounders, the upper tier of 12-pounders, and the cannon on the quarter-deck and fore-caſtle are 6-pounders. The complement of a 50 gun ſhip is 350 men, in which there are three lieutenants, two maſter's mates, 10 midſhipmen, two ſurgeon's mates, eight quarter-maſters and their mates, four boatſwain's mates and yeomen, one gunner's mate and one yeoman, with 12 quarter-gunners, one carpenter's mate and ſix aſſiſtants, and a ſteward and ſteward's mate.

All veſſels of war, under the fourth rate, are uſually comprehended under the general name of *frigates*, and never appear in the line of battle. They are divided into the 5th and 6th rates; the former mounting from 40 to 32 guns, and the latter from 28 to 20. The largeſt of the fifth rate have two decks of cannon, the lower battery being of 18-pounders, and that of the upper deck of 9-pounders; but thoſe of 36 and 32 guns have one complete deck of guns, mounting 12-pounders, beſides the quarter-deck and fore-caſtle, which carry 6-pounders. The complement of a ſhip of 44 guns is 280 men; and that of a frigate of 36 guns, 240 men. The firſt has three, and the ſecond two, lieutenants; and both have two maſter's mates, ſix midſhipmen, two ſurgeon's mates, ſix quarter-maſters and their mates, two boatſwain's mates and one yeoman, one gunner's mate and one yeoman, with 10 or 11 quarter-gunners, and one purſer's ſteward.

Frigates of the 6th rate carry 9-pounders, thoſe of 28 guns having 3-pounders on their quarter-deck, with 200 men for their complement; and thoſe of 24, 160 men: the former has two lieutenants, the latter, one; and both have two maſter's mates, four midſhipmen, one ſurgeon's mate, four quarter-maſters and their mates, one boatſwain's mate and one yeoman, one gunner's mate and one yeoman, with ſix or ſeven quarter-gunners, and one purſer's ſteward.

The ſloops of war carry from 18 to 8 cannon, the largeſt of which have ſix-pounders; and the ſmalleſt, viz. thoſe of 8 or 10 guns, four-pounders. Their officers are generally the ſame as in the 6th rates, with little variation; and their complements of men are from 120 to 60, in proportion to their force or magnitude. *N. B.* Bomb-veſſels are on the ſame eſtabliſhment as ſloops; but fire-ſhips and hoſpital-ſhips are on that of fifth rates.

Nothing more evidently manifeſts the great improvement of the marine art, and the degree of perfection to which it has arrived in Britain, than the facility of managing their firſt rates; which were formerly eſteemed incapable of government, unleſs in the moſt favourable weather of the ſummer.

Ships of the ſecond rate, and thoſe of the third, which have three decks, carry their ſails remarkably well, and labour very little at ſea. They are excellent in a general action, or in cannonading a fortreſs. Thoſe of the third rate, which have two tiers, are fit for the line

Rateen | Ratio.

line of battle, to lead the convoys and squadrons of ships of war in action, and in general to suit the different exigencies of the naval service.

The fourth rates may be employed on the same occasions as the third-rates, and may be also destined amongst the foreign colonies, or on expeditions of great distance; since these vessels are usually excellent for keeping and sustaining the sea.

Vessels of the fifth rate are too weak to suffer the shock of a line of battle; but they may be destined to lead the convoys of merchant ships, to protect the commerce in the colonies, to cruize in different stations, to accompany squadrons, or to be sent express with necessary intelligence and orders. The same may be observed of the sixth rates.

The frigates, which mount from 28 to 38 guns upon one deck, with the quarter-deck, are extremely proper for cruising against privateers, or for short expeditions, being light, long, and usually excellent sailors.

RATEEN, or RATTEN, in commerce, a thick woollen stuff, quilled, woven on a loom with four treddles, like serges and other stuffs that have the whale or quilling. There are some rateens dressed and prepared like cloths: others left simply in the hair, and others where the hair or knap is frized. Rateens are chiefly manufactured in France, Holland, and Italy, and are mostly used in linings. The frize is a sort of coarse rateen, and the drugget is a rateen half linen half woollen.

RATIFICATION, an act approving of and confirming something done by another in our name.

RATIO, in arithmetic and geometry, is that relation of homogeneous things which determines the quantity of one from the quantity of another, without the intervention of a third.

Two numbers, lines, or quantities, A and B, being proposed, their relation one to another may be considered under one of these two heads: 1. How much A exceeds B, or B exceeds A? And this is found by taking A from B, or B from A, and is called *arithmetic reason*, or *ratio*. 2. Or how many times, and parts of a time, A contains B, or B contains A? And this is called *geometric reason* or *ratio*; (or, as Euclid defines it, it is the *mutual habitude*, or *respect*, of two magnitudes of the same kind, according to quantity; that is, as to how often the one contains, or is contained in, the other); and is found by dividing A by B, or B by A. And here note, that that quantity which is referred to another quantity is called the *antecedent of the ratio*: and that to which the other is referred is called the *consequent of the ratio*; as, in the ratio of A to B, A is the antecedent, and B the consequent. Therefore any quantity, as antecedent, divided by any quantity as a consequent, gives the ratio of that antecedent to the consequent.

Thus the ratio of A to B is $\frac{A}{B}$, but the ratio of B to A is $\frac{B}{A}$; and, in numbers, the ratio of 12 to 4 is $\frac{12}{4} = 3$, or triple; but the ratio of 4 to 12 is $\frac{4}{12} = \frac{1}{3}$, or subtriple.

And here note, that the quantities thus compared must be of the same kind; that is, such as by multiplication may be made to exceed one the other, or as these quantities are said to have a ratio between them, which, being multiplied, may be made to exceed one another. Thus a line, how short soever, may be multiplied, that is, produced so long as to exceed any given right line; and consequently these may be compared together, and the ratio expressed: but as a line can never, by any multiplication whatever, be made to have breadth, that is, to be made equal to a superficies, how small soever; these can therefore never be compared together, and consequently have no ratio or respect one to another, according to quantity; that is, as to how often the one contains, or is contained in, the other. See QUANTITY.

Ratiocination | Ratisbon.

RATIOCINATION, the act of reasoning. See REASONING.

RATION, or RATIAN, in the army, a portion of ammunition, bread, drink, and forage, distributed to each soldier in the army, for his daily subsistence, &c. The horse have rations of hay and oats when they cannot go out to forage. The rations of bread are regulated by weight. The ordinary ration of a foot soldier is a pound and a half of bread per day. The officers have several rations according to their quality and the number of attendants they are obliged to keep.—When the ration is augmented on occasions of rejoicing it is called a *double ration*. The ship's crews have also their rations or allowance of bisket, pulse, and water, proportioned according to their stock.

RATIONALE, a solution or account of the principles of some opinion, action, hypothesis, phenomenon, or the like.

RATIBOR, a town of Germany, in Silesia, and capital of a duchy of the same name, with a castle. It has been twice taken by the Swedes, and is seated on the river Oder, in a country fertile in corn and fruits, 15 miles north-east of Troppaw, and 142 east of Prague. E. Long. 22. 24. N. Lat. 50. 14.

RATISBON, an ancient, large, rich, hansome, and strong city of Germany, in Bavaria, free and imperial, with a bishop's see, whose bishop is a prince of the empire. It is called by the Germans Regensburg, from the river Regens, which runs under a fine stone bridge, and throws itself into the Danube below the city; and the rivers Luber and Nab mix with it above the city. The French call it Ratisbon, in imitation of the Latins; it hath formerly been subject to the kings of Bavaria, who made it the place of their residence; but it was declared free by the emperor Frederick I. which does not however, hinder the dukes of Bavaria from dividing the toll with the citizens, according to an agreement between them. These princes have also the criminal jurisdiction, for which the magistrates of the city pay them homage. It is the first city of the bench of Suabia, and contains at present within its walls five different free states of the empire; namely, the bishop, the abbot of St Emmeran, the abbesses of the Low and High Munster, and the city. The inhabitants of Ratisbon have the privilege not to be cited before other tribunals, unless for actions above 400 florins. The senate is composed of 17 members, and there is a council of 10, which is charged with the government of the state. The citzens have a right to elect a chief, who judges of the affairs of police. The catholics have the exercise of their religion in the cathedral church, and others, and the

Ratlines || Ravelin.

the Lutherans in three churches, which they have built. The magiſtrates and officers of the city are all Proteſtants; and it is to be remarked, that although there are about 22 Catholic churches, yet there are very few Catholic citizens, the magiſtracy not allowing the freedom of the town to be given to Catholics living there. As this city is large, elegant, and full of magnificent houſes, it has been choſen many years for the place of holding the diet, upon account of the conveniency, to many neighbouring princes and ſtates of ſending their proviſions by land and water, without great expence. The town-houſe, in the hall of which the Diet meets, is extremely magnificent. In the year 1740, however, when there was a war in Germany, the Diet met at Frankfort on the Main, till after the death of the emperor Charles VII. Proviſions are very plentiful at Ratiſbon in time of peace. The inhabitants have a good deal of trade, the river on which it ſtands being navigable, and communicating with a great part of Germany. It is 55 miles ſouth-eaſt of Nuremberg, 62 north of Munich, and 195 weſt of Vienna. E. Long 12. 5. N. Lat. 48. 59.

RATLINES, or, as the ſailors call them *ratlins*, thoſe lines which make the ladder ſteps to go up the ſhrouds and puttocks, hence called the *ratlins of the ſhrouds*.

RATOLFZEL, a ſtrong town of Germany, in Suabia, near the weſt end of the lake Conſtance. It is ſeated on the part of it called *Bodenſee*, and belongs to the houſe of Auſtria, who took it from the duke of Wirtemburg, after the battle of Nordlingen. It is 12 miles weſt of the city of Conſtance. It is defended by the impregnable caſtle of Hohen Dwel, on an inacceſſible hill in the middle of a plain, the rock of which is flint, ſo that a few men may hold it out againſt an army.

RATTLESNAKE. See CROTALUS.

Rattlesnake Root. See POLYGALA.

RATZEBURG, or RATZEMBURG, an ancient town of Germany, in the circle of Lower Saxony, and in the duchy of Lawenburgh, with a biſhop's ſee and a caſtle. The town depends on the duchy of Lawenburg, and the cathedral church on that of Ratzburg. It is ſeated on an eminence, and almoſt ſurrounded with a lake 25 miles in length and three in breadth. The Duke of Lawenburg ſeized and fortified it in 1689, and the king of Denmark took it in 1693; but it was diſmantled, and reſtored in 1700 to the Duke, who re-fortified it. This town has been frequently pillaged, particularly in 1552, by Francis duke of Saxe Lawenburg, becauſe the canons refuſed to elect his ſon Magnus their biſhop. It lies nine miles ſouth of Lubec. This place is noted for its excellent beer. E. Long. 10. 58. N. Lat. 53. 47.

RAVA, a town of Great Poland, and capital of a palatinate of the ſame name, with a fortified caſtle, where they keep ſtate priſoners. The houſes are built of wood, and there is a Jeſuits college. It is ſeated in a moraſs covered with water, which proceeds from the river Rava, with which it is ſurrounded. It is 45 miles ſouth of Bloſko, and 50 ſouth-weſt of Warſaw. The palatinate is bounded on the north by that of Bloſko, on the eaſt by that of Mazovia, on the ſouth by that of Sandomer, and on the weſt by that of Lencieza.

RAVELIN, in fortification, was anciently a flat baſtion placed in the middle of a curtain; but now a detached work compoſed only of two faces, which make a ſaliant angle without any flanks, and raiſed before the counterſcarp of the place. See FORTIFICATION.

Raven || Ravet.

RAVEN, in ornithology. See CORVUS.

Sea RAVEN or *corvo marino* of Kongo in Africa, in ichthyology, is about ſix feet long, and big in proportion; but the moſt ſingular circumſtance appertaining to this creature is the ſtone found in its head, to which the natives aſcribe ſome medicinal virtues, and the delicate taſte of its hard roe, which is ſtill much admired, when dried in the ſun, and becomes as hard as a ſtone.

RAVENGLAS, a town of Cumberland in England, ſituated between the rivers Irt, and Eſk, which, with the ſea, encompaſs three parts of it. It is a well built place, and has a good road for ſhipping, which brings it ſome trade. E. Long. 0. 5. N. Lat. 54. 20.

RAVENNA (anc. geog.), a noble city of Gallia Ciſpadana; a colony of Theſſalians, on the Adriatic, in waſhes or a boggy ſituation, which proved a natural ſecurity to it. The houſes were all of wood, the communication by bridges and boats, and the town kept ſweet and clean by the tides carrying away the mud and ſoil, (Strabo). Anciently it had a port at the mouth of the Bedeſis; Auguſtus added a new port, capacious to hold a fleet, for the ſecurity of the Adriatic, between which and the city lay the via Cæſaris. In the lower age it was the ſeat of the Oſtrogoths, for 72 years; but being recovered by Narſes, Juſtinian's general, it became the reſidence of the exarchs, magiſtrates ſent by the emperor from Conſtantinople, for 175 years, when it was taken by the Longobards. It is ſtill called *Ravenna*, capital of Romania. The ſeat of the weſtern or Roman Empire was by Honorius tranſlated to Ravenna about the year 404, and hence the country in which it ſtood was called *Romania*, in the pope's territory. It had a very flouriſhing trade till the ſea withdrew two miles from it, which has been a great detriment. The fortifications are of little importance, and the citadel is gone to ruin. It is now moſt remarkable for the excellent wine produced in its neighbourhood. The mauſoleum of Theodoric is ſtill to be ſeen, remarkable for being covered by a ſingle ſtone 28 feet in diameter and 15 thick. It was at Ravenna that the duke of Nemours fell, after having gained a moſt deciſive victory over the confederate army, in 1511. See FRANCE n° 129, and Modern Univerſal Hiſtory, vol. xx. p. 324. &c.

RAVENSBURG, a county of Germany, in Weſtphalia, bounded on the north by the biſhopries of Oſnaburg and Minden, on the eaſt by Lemgow, on the ſouth by the biſhopric of Paderborn, and on the weſt by that of Munſter. It belongs to the king of Pruſſia, and has its name from the caſtle of Ravenſburg.

RAVENSBURG, a free and imperial town of Germany, in Algow, in the circle of Suabia. It is well built, and the public ſtructures are handſome. The inhabitants are partly Proteſtants and partly Papiſts. It is ſeated on the river Chenſs, in E. Long. 9. 46. N. Lat. 47. 44.

RAVET, an inſect ſhaped like a may-bug, or cock chaffel, (ſee SCARABÆUS), with which the iſland of Guadaloupe is much peſtered. It has a ſtinking ſmell, preys upon paper, books, and furniture, and whatever they

they do not gnaw is defeatured by their ordure. These nasty insects, which are very numerous, and appear chiefly by night, would be intolerable, were it not for a large species, some of them as long as a man's fist, which intangles them in its web, and otherwise surprises them. On which account the inhabitants of the island are very careful of these spiders.

RAVILLIAC (Francis), the infamous assassin of Henry IV. of France, was a native of Angoulesme, and at the time of his execution he was about one or two and thirty years of age. See FRANCE, n° 146, and HENRY IV. of France. Ravilliac was the son of parents who lived upon alms. His father was that sort of inferior retainer to the law, to which the vulgar give the name of a *pettifogger*, and his son had been bred up in the same way. Ravilliac had set up a claim to an estate, but the cause went against him: this disappointment affected his mind deeply: he afterwards taught a school, and, as himself said, received charitable gifts, though but of a very small value, from the parents of those whom he taught; and yet his distress was so great, that he had much ado to live. When he was seized for the king's murder, he was very loosely guarded; all were permitted to speak with him who pleased; and it was thought very remarkable that a Jesuit should say to him, "Friend, take care, whatever you do, that you don't charge honest people." He was removed next day from the house of Espernon to the Conciergerie, the proper prison of the parliament of Paris. When he was first interrogated, he answered with great boldness, "That he had done it, and would do it, if it were to do again." When he was told that the king, though dangerously wounded, was living, and might recover, he said that he had struck him home, and that he was sure he was dead. In his subsequent examinations he owned that he had long had an intention to kill the king, because he suffered two religions in his kingdom; and that he endeavoured to obtain an audience of him, that he might admonish him. He also said that he understood the king's great armament to be against the pope, and that, in his opinion, to make war against the pope, was to make war against God. We have no distinct account of the three last examinations; but he is said to have persisted, in the most solemn asseverations, that he had no accomplices, and that nobody had persuaded him to the fact. He appeared surprised at nothing so much as at the universal abhorrence of the people, which, it seems, he did not expect. They were forced to guard him strictly from his fellow-prisoners, who would otherwise have murdered him. The butchers of Paris desired to have him put into their hands, affirming that they would flay him alive, and that he should still live 12 days. When he was put to the torture, he broke out into horrid execrations, and always insisted that he did the fact from his own motive, and that he could accuse nobody. On the day of his execution, after he had made the *amende honourable* before the church of Notre-Dame, he was carried to the Greve; and, being brought upon a scaffold, was tied to a wooden engine in the shape of a St Andrew's cross. The knife with which he did the murder being fastened in his right hand, it was first burnt in a slow fire; then the fleshy parts of his body were torn with red hot pincers, and melted lead, oil, pitch, and rosin, poured into the wounds and through a clay funnel into his bowels by the navel. The people retired to pray for him; and when, according to the sentence pronounced upon him, he came to be dragged to pieces by four horses, one of those that were brought appearing to be but weak, one of the spectators offered his own, with which the criminal was much moved: he is said to have then made a confession, which was so written by the greffier Voisin, that not so much as one word of it could ever be read. He was very earnest for absolution, which his confessor refused, unless he would reveal his accomplices; "Give it me conditionally (said he); upon condition that I have told the truth," which they did. His body was so robust, that it resisted the force of the horses; and the executioner was at length obliged to cut him into quarters, which the people dragged through the streets. The house in which he was born was demolished, and a column of infamy erected; his father and mother were banished from Angoulesme, and ordered to quit the kingdom upon pain of being hanged, if they returned, without any form of process; his brothers, sisters, uncles, and other relations, were commanded to lay aside the name of Ravilliac, and to assume some other. Such was the fate of this execrable monster, who, according to his own account, suffered himself to be impelled to such a fact by the seditious sermons and books of the Jesuits, whom Henry, rather out of fear than love, had recalled and caressed, and to whom he had bequeathed his heart. Ravilliac.

Neither the dying words of Ravilliac, nor so much of his process as was published, were credited by his cotemporaries. Regalt the historian says, that there were two different opinions concerning this assassination; one, that it was conducted by some grandees, who sacrificed that monarch to their old resentments; the other, that it was done by the emissaries of the Spaniards. Letters from Brussels, Antwerp, Mechlin, and other places, were received before the 15th of May, with a report of the king's death. Though nothing occurs in the examinations of Ravilliac that were first published, in reference to his journeys to Naples and other places; yet as these are set down as certain truths by good authors, so there are probable grounds to believe that they were not fictitious. It appears from Sir Ralph Winwood's Memorials, that Ravilliac had been not long before at Brussels. Amongst other circumstances that created a very great doubt, whether the assassin spoke truth, were the things found in his pocket at the time he was seized; amongst which was a chaplet, the figure of a heart made in cotton, in the centre of which he said there was a bit of the true cross, but when cut there was none, which he affirmed was given him by a canon at Angoulesme, a piece of paper with the arms of France painted upon it, another full of characters, and a third containing verses for the meditation of a criminal going to execution. The provost of Pluviers, or Petiviers, in Beauce, about six miles from Paris, had said openly on the day that Henry IV. was murdered, "This day the king is either slain or dangerously wounded," After the king's death was known, he was seized and sent prisoner to Paris; but, before he was examined, he was found hanged in the strings of his drawers. His body was, notwithstanding, hung up by the heels on the common gibbet on the 19th of June. What increased the suspicions grounded

Raun || Ray.

grounded on this man's end, was his having two ſons Jeſuits, and his being a dependent on the family of Monſieur d'Entragues.

RAUN, upon the river Miza, a town of ſome ſtrength, remarkable for a bloody ſkirmiſh between the Pruſſians and Auſtrians, in Auguſt 1744. The king of Pruſſia, intending to get poſſeſſion of Beraun, ſent thither ſix battalions, with eight cannon, and 800 huſſars; but General Feſtititz being there with a great party of his corps, and M. Lacy with 1000 horſe, they not only repulſed the Pruſſians, but attacked them in their turn, and, after a warm diſpute, obliged them to retire with conſiderable loſs.

RAURICUM (anc. geog.), a town of the Raurici, ſituated over againſt Abnoba, a mountain from which the Danube takes its riſe. A Roman colony led by L. Manutius Planeus the ſcholar and friend of Cicero: called *Colonia Rauriaca* (Pliny), *Raurica* (Inſcription), *Auguſta Rauricorum*. The town was deſtroyed in Julian's time. It is now commonly called *Augſt*, a village greatly decayed from what it formerly was. It is ſituated on the Rhine, diſtant about two hours to the eaſt of Baſil. The country is now the canton of Baſil.

RAY (John), a celebrated botaniſt, was the ſon of Mr Roger Ray a blackſmith, and was born at Black Notly in Eſſex in 1628. He received the firſt rudiments of learning at the grammar ſchool at Braintree; and in 1644 was admitted into Catharine hall in Cambridge, from whence he afterwards removed to Trinity college in that univerſity. He took the degree of maſter of arts, and became at length a ſenior fellow of the college; but his intenſe application to his ſtudies having injured his health, he was obliged at his leiſure hours to exerciſe himſelf by riding or walking in the fields, which led him to the ſtudy of plants. He noted from Johnſon, Parkinſon, and the *Phytologia Britannica*, the places where curious plants grew; and in 1658 rode from Cambridge to the city of Cheſter, from whence he went into North Wales, viſiting many places, and among others the famous hill of Snowdon; returning by Shrewſbury and Glouceſter. In 1660 he publiſhed his *Catalogus Plantarum circa Cantabrigian naſcentium*, and the ſame year was ordained deacon and prieſt. In 1661 he accompanied Francis Willoughby, Eſq; and others in ſearch of plants and other natural curioſities, in the north of England and Scotland; and the next year made a weſtern tour from Cheſter, and through Wales, to Cornwall, Devonſhire, Dorſetſhire, Hampſhire, Wiltſhire, and other counties. He afterwards travelled with Mr Willoughby and other gentlemen through Holland, Germany, Italy, France, &c. took ſeveral tours in England, and was admitted fellow of the Royal Society. In 1672, his intimate and beloved friend Mr Willoughby died in the 37th year of his age, at Middleton Hall, his ſeat in Yorkſhire; "to the infinite and unſpeakable loſs and grief (ſays Mr Ray) of myſelf, his friends, and all good men." There having been the cloſeſt and ſincereſt friendſhip between Mr Willoughby and Mr Ray, who were men of ſimilar natures and taſtes, from the time of their being fellow collegians, Mr Willoughby not only confided in Mr Ray, in his lifetime, but alſo at his death: for he made him one of the executors of his will, and charged him with the education of his ſon Francis and Thomas, leaving him alſo for life Col. per annum. The eldeſt of theſe young gentlemen not being four years of age, Mr Ray, as a faithful truſtee, betook himſelf to the inſtruction of them; and for their uſe compoſed his *Nomenclator Claſſicus*, which was publiſhed this very year, 1672. Francis the eldeſt dying before he was of age, the younger became Lord Middleton. Not many months after the death of Mr Willoughby, Mr Ray loſt another of his beſt friends, biſhop Wilkins; whom he viſited in London the 18th of November 1672, and found near expiring by a total ſuppreſſion of urine for eight days. As it is natural for the mind, when it is hurt in one part, to ſeek relief from another; ſo Mr Ray, having loſt ſome of his beſt friends, and being in a manner left deſtitute, conceived thoughts of marriage; and accordingly, in June 1673, did actually marry a gentlewoman of about 20 years of age, the daughter of Mr Oakly of Launton in Oxfordſhire. Towards the end of this year, came forth his "Obſervations Topographical, Moral, &c." made in foreign countries; to which was added his *Catalogus Stirpium in exteris regionibus obſervatarum*: and about the ſame time, his *Collection of unuſual or local Engliſh words*, which he had gathered up in his travels through the counties of England. After having publiſhed many books on ſubjects foreign to his profeſſion, he at length reſolved to publiſh in the character of a divine, as well as in that of a natural philoſopher: in which view he publiſhed his excellent demonſtration of the being and attributes of God, entitled *The Wiſdom of God manifeſted in the Works of the Creation*, 8vo, 1697. The rudiments of this work were read in ſome college lectures; and another collection of the ſame kind he enlarged and publiſhed under the title of *Three Phyſico-theological Diſcourſes, concerning the Chaos, Deluge, and Diſſolution of the World*, 8vo, 1692. He died in 1705. He was modeſt, affable, and communicative; and was diſtinguiſhed by his probity, charity, ſobriety, and piety. He wrote a great number of works; the principal of which, beſides thoſe already mentioned, are, 1. *Catalogus Plantarum Angliæ*. 2. *Dictionariorum Trilingue ſecundum locos communes*. 3. *Hiſtoria Plantarum, Species, hactenus editas, aliaſque inſuper multas noviter inventas et deſcriptas complectens*, 3 vols. 4. *Methodus Plantarum nova, cum Tabulis*, 8vo, and ſeveral other works on plants. 6. *Synopſis Methodica Animalium quadrupedum et Serpentini generis*, 8vo. 6. *Synopſis Methodica Aviuum et Piſcium*. 7. *Hiſtoria Inſectorum, opus poſthumum*. 8. *Methodus Inſectorum*. 9. Philoſophical Letters, &c.

Ray.

RAY, in optics, a beam of light emitted from a radiant or luminous body. See LIGHT and OPTICS.

Inflected Rays, thoſe rays of light which, on their near approach to the edges of bodies, in paſſing by them, are bent out of their courſe, being turned either from the body or towards it. This property of the rays of light is generally termed *diffraction* by foreigners, and Dr Hooke ſometimes called it *deflection*.

Reflected Rays, thoſe rays of light which, after falling upon the body, do not go beyond the ſurface of it, but are thrown back again.

Refracted Rays, thoſe rays of light which, after falling upon any medium, enter its ſurface, being bent either towards or from a perpendicular to the point on which they fell.

Ray Reading.

Pencil of Rays, a number of rays iſſuing from the point of an object, and diverging in the form of a cone.

RAZOR, a well known inſtrument, uſed by ſurgeons, barbers, &c. for ſhaving off the hair from various parts of the body.—As ſhaving to many people is a moſt painful operation, cutlers in different countries have long applied their ſkill to remove that inconvenience. Some have invented ſlops of a peculiar kind to make the operation more eaſy, and ſome have invented ſtraps. With reſpect to razors, ſome artiſts have ſucceeded rather by accident than from any fixed principle; and therefore we have found great inequality in the goodneſs of razors made by the ſame artiſt.

A correſpondent aſſures us, that he has for 40 years paſt been at much pains to find out razors made by the beſt makers both in England and Scotland, and was fortunate enough, about 22 years ago, to diſcover a kind made by a Scotchman of the name of *Logan*, which he called magnetical razors, becauſe they were directed to be touched with an artificial magnet before uſing. Theſe, our friend aſſures us, are moſt excellent razors, and he has uſed them for upwards of 20 years. He ſays likewiſe that they continue in good order, without requiring to be ground; but that the great draw-back on their being generally uſed, is the price, which is higher than moſt people are able or diſpoſed to give for that inſtrument. Our correſpondent, who reſides in the vicinity of London, alſo informs us, that lately the famous ſurgeon's inſtrument-maker, Mr Savigny in Pall Mall, after numberleſs experiments, in the courſe of above 20 years, has at length brought razors to a degree of perfection never yet equalled; and with ſuch certainty, that the purchaſer is in no danger of a diſappointment, though the price is very moderate. By theſe, we are told, the operation of ſhaving is performed with greater eaſe, more perfectly, and more expeditiouſly, than with any other.

RE, in grammar, an inſeparable particle added to the beginning of words to double or otherwiſe modify their meaning; as in re-action, re-move, re-export, &c.

RE-ACTION, in phyſiology, the reſiſtance made by all bodies to the action or impulſe of others that endeavour to change its ſtate whether of motion or reſt, &c.

READING, the art of delivering written language with propriety, force, and elegance.

"We muſt not judge ſo unfavourably of eloquence or good reading (ſays the illuſtrious Fenelon), as to reckon it only a frivolous art, that a declaimer uſes to impoſe upon the weak imagination of the multitude, and to ſerve his own ends. It is a very ſerious art, deſigned to inſtruct people; to ſuppreſs their paſſions and reform their manners; to ſupport the laws, direct public councils, and to make men good and happy."

1 Delivery in reading ſhould be more animated than in intereſted ſpeaking.

Reaſon and experience demonſtrate, that *delivery in reading ought to be more animated than in intereſted ſpeaking*. In every exercile of the faculty of ſpeech, and thoſe expreſſions of countenance and geſture with which it is generally attended, we may be conſidered to be always in one of the two following ſituations: Firſt, delivering our *own ſentiments* on circumſtances which relate to ourſelves or others, or, ſecondly, *repeating* ſomething that was ſpoken on a certain occaſion for the amuſement or information of an auditor. Now, if we obſerve the deliveries natural to theſe two ſituations, we ſhall find, that the firſt may be accompanied with every degree of expreſſion which can manifeſt itſelf in us, from the loweſt of ſympathy to the moſt violent and energetic of the ſuperior paſſions; while the latter, from the ſpeaker's chief buſineſs being to repeat what he heard *with accuracy*, diſcovers only a faint imitation of thoſe ſigns of the emotions which we ſuppoſe agitated him from whom the words were firſt borrowed.—The uſe and neceſſity of this difference of manner is evident; and if we are attentive to theſe natural ſigns of expreſſion, we ſhall find them conforming with the greateſt nicety to the ſlighteſt and moſt minute movements of the breaſt. Reading.

This repetition of another's words might be ſuppoſed to paſs through the mouth of a ſecond or third perſon; and in theſe caſes, ſince they were not ear and eye witneſſes of him who firſt ſpoke them, their manner of delivery would want the advantage neceſſarily ariſing from an immediate idea of the original one; hence, on this account, this would be a ſtill leſs lively repreſentation than that of the firſt *repeater*. But as, from a daily obſervation of every variety of ſpeech and its aſſociated ſigns of emotion, mankind ſoon became pretty well acquainted with them, and this in different degrees, according to their diſcernment, ſenſibility, &c. experience ſhows us that theſe latter *repeaters* (as we call them) might conceive and uſe a manner of delivery which, though leſs *characteriſtic* perhaps, would on the whole be no way inferior to the firſt, as to the *common* natural expreſſion proper for their ſituation. It appears, therefore, that repeaters *of every degree* may be eſteemed upon a level as to animation, and that our twofold diſtinction above contains accurately enough the whole variety of ordinary delivery;—we ſay *ordinary*, becauſe

There is another very peculiar kind of delivery ſometimes uſed in the perſon of a *repeater*, of which it will in this place be neceſſary to take ſome notice. What we mean here is *mimicry*; an accompliſhment which, when perfectly and properly diſplayed, never fails of yielding a high degree of pleaſure. But ſince this pleaſure chiefly reſults from the principle of *imitation* reſpecting *manner*, and not from the purport of the *matter* communicated; ſince, comparatively ſpeaking, it is only attainable by a few perſons, and practiſed only on particular occaſions;—on theſe accounts it muſt be refuſed a place among the modes of uſeful delivery taught us by *general* nature, and eſteemed a qualification purely anomalous.

Theſe diſtinctions with regard to a ſpeaker's ſituation of mind premiſed, let us ſee to which of them an *author* and his *reader* may moſt properly be referred, and how they are circumſtanced with regard to one another.

The matter of all books is, either what the author ſays in his *own* perſon, or an acknowledged recital of the words of *others*: hence an author may be eſteemed both an *original* ſpeaker and a *repeater*, according as what he writes is of the firſt or ſecond kind. Now a reader muſt be ſuppoſed either actually to perſonate the author, or one whoſe office is barely to communicate what he has ſaid to an auditor. But in the firſt of theſe ſuppoſitions he would, in the delivery of what is the author's own, evidently commence *mimic*; which being, as

above

Reading. above obſerved, a character not acknowledged by general nature in this department, ought to be rejected as generally improper. The other ſuppoſition therefore muſt be accounted right; and then, as to the *whole* matter of the book, the reader is found to be exactly in the ſituation of a *repeater*, ſave that he takes what he delivers from the page before him inſtead of his memory. It follows then, in proof of our initial propoſition, that, if we are directed by nature and propriety, the manner of our delivery in reading ought to be inferior in warmth and energy to what we ſhould uſe, were the language before us the ſpontaneous effuſions of our own hearts in the circumſtances of thoſe out of whoſe mouths it is ſuppoſed to proceed.

Evident as the purport of this reaſoning is, it has not ſo much as been glanced at by the writers on the ſubject we are now entered upon, or any of its kindred ones; which has occaſioned a manifeſt want of accuracy in ſeveral of their rules and obſervations. Among the reſt, this precept has been long reverberated from author to author as a perfect ſtandard for propriety in reading. "Deliver yourſelves in the ſame manner you would do, were the matter your own original ſentiments uttered directly from the heart." As all kinds of delivery muſt have many things in common, the rule will in many articles be undoubtedly right; but, from what has been ſaid above, it muſt be as certainly faulty in reſpect to ſeveral others; as it is certain nature never confounds by like ſigns two things ſo very different, as a *copy* and an *original*, an emanation darted immediately from the ſun, and its weaker appearance in the lunar reflection.

The precepts we have to offer for improving the abovementioned rule, ſhall be delivered under the heads of *accent*, *emphaſis*, *modulation*, *expreſſion*, *pauſes*, &c.

a Accent. I. *Accent.* In attending to the affections of the voice when we ſpeak, it is eaſy to obſerve, that, independent of any other conſideration, one part of it differs from another, in *ſtreſs*, *energy*, or *force* of utterance. In words we find one ſyllable differing from another with reſpect to this mode; and in ſentences one or more words as frequently vary from the reſt in a ſimilar manner. This ſtreſs with regard to *ſyllables* is called *accent*, and contributes greatly to the variety and harmony of language. Reſpecting *words*, it is termed *emphaſis*; and its chief office is to aſſiſt the ſenſe, force, or perſpicuity of the ſentence—of which more under the next head.

"Accent (as deſcribed in the Lectures on Elocution) is made by us two ways; either by dwelling longer upon one ſyllable than the reſt, or by giving it a ſmarter percuſſion of the voice in utterance. Of the firſt of theſe we have inſtances in the words *glory*, *father*, *holy*; of the laſt in *bat'tle*, *hab'it*, *lor'row*. So that accent with us is not referred to tune, but to time; to quantity, not quality; to the more equable or precipitate motion of the voice, not to the variation of the notes or inflexions."

In *theatric declamation*, in order to give it more pomp and ſolemnity, it is uſual to dwell longer than common upon the unaccented ſyllables; and the author now quoted has endeavoured to prove (p. 51. 54.) the practice faulty, and to ſhow (p. 55.) that "though it (i. e. true ſolemnity) may demand a ſlower utterance than uſual, yet (it) requires that the ſame proportion in point of quantity be obſerved in the ſyllables, as there is in muſical notes when the ſame tune is played in quicker and ſlower time." But that this deviation from ordinary ſpeech is not a fault, as our author thinks; nay, that on the contrary it is a real beauty when under proper regulation, the following obſervations will, it is hoped will ſufficiently prove. Part 2.

(I.) It is a truth of the moſt obvious nature, that thoſe things which on their application to their proper ſenſes have a power of raiſing in us certain ideas and emotions, are ever *differently* modified in their conſtituent parts when different effects are produced in the mind: and alſo (II.) that, within proper bounds, were we to ſuppoſe theſe conſtituent parts to be proportionally increaſed or diminiſhed as to *quantity*, this effect would ſtill be the ſame as to *quality*.—For inſtance: The different ideas of ſtrength, ſwiftneſs, &c. which are raiſed in us by the ſame ſpecies of animals, is owing to the different form of their correſponding parts; the different effects of muſic on the paſſions, to the different airs and movements of the melody; and the different expreſſions of human ſpeech, to a difference in tone, ſpeed, &c. of the voice. And theſe peculiar effects would ſtill remain the ſame, were we to ſuppoſe the animals above alluded to, to be *greater* or *leſſer*, within their proper bounds; the movement of the muſic *quicker* or *ſlower*, provided it did not palpably interfere with that of ſome other ſpecies; and the pitch of the voice *higher* or *lower*, if not carried out of the limits in which it is obſerved on ſimilar occaſions naturally to move. Farther (III.) ſince, reſpecting the emotions more eſpecially, there are no rules to determine *à priori* what effect any particular attribute or modification of an object will have upon a percipient, our knowledge of this kind muſt evidently be gained from experience. Laſtly, (IV.) In every art imitating nature we are pleaſed to ſee the characteriſtic members of the pattern *heightened* a little farther than perhaps it ever was carried in any real example, provided it be not bordering upon ſome ludicrous and diſagreeable provinces of exceſs.

Now for the application of theſe premiſſes.—To keep pace and be conſiſtent with the *dignity* of the tragic muſe, the delivery of her language ſhould neceſſarily be dignified; and this it is plain from obſervation (I.) cannot be accompliſhed otherwiſe than by ſomething different in the manner of it from that of ordinary ſpeech; ſince *dignity* is eſſentially different from *familiarity*. But how muſt we diſcover this different manner? By attending to nature: and in this caſe ſhe tells us, that beſides uſing a *ſlower* delivery, and greater *diſtinctneſs* of the words (which every thing merely *grave* requires, and gravity is a *concomitant* of dignity, though not its *eſſence*), we muſt dwell a little *longer* upon the *unaccented* ſyllables than we do in common. As to what our author obſerves in the above quotation, of *dignity's* only requiring a *ſlower* utterance than ordinary, while the proportion of the ſyllables as to quantity continues the ſame; it is apprehended the remark (II.) reſpecting *quickneſs* and *ſlowneſs* of movement, will ſhow it to be not altogether true. For ſince the delivery is not altered in *form*, its expreſſion muſt be ſtill of the ſame kind, and perhaps what may be rightly ſuggeſted by the term *gravely familiar*.

Reading. But ſomething farther may be yet ſaid in defence of this *antique* delivery, as our author calls it. Is not the movement of any thing, or whatever ſpecies, when dignified or ſolemn, in general of an *equable* and *deliberate* nature (as in the minuet, the military ſtep, &c.)? And in theatrical declamation, is not the propenſity to introduce this quality ſo ſtrong, that it is almoſt *impoſſible* to avoid it wholly, were we ever ſo determined to do it? If theſe two queries be anſwered in the affirmative (as we are perſuaded they will), while the firſt ſupports our argument for the *propriety* of the manner of delivery in queſtion, the ſecond diſcovers a kind of *neceſſity* for it. And that this manner may be carried a little *farther* in quantity on the *ſtage* than is uſual in *real life*, the principle (IV.) of heightening nature will juſtify, provided faſhion (which has ever ſomething to do in theſe articles) give it a ſanction; for the *preciſe* quantity of ſeveral heightenings may be varied by this great legiſlator almoſt at will.

3 Emphaſis. II. *Emphaſis*. As *emphaſis* is not a thing annexed to particular words, as *accent* is to ſyllables, but owes its riſe chiefly to the *meaning* of a paſſage, and muſt therefore vary its ſeat according as that meaning varies, it will be neceſſary to explain a little farther the general idea given of it above,

> Of man's firſt diſobedience, and the fruit
> Of that forbidden tree, whoſe mortal taſte
> Brought death into the world, and all our woe, &c.
> Sing heav'nly muſe, &c.

Suppoſing, in reference to the above well-known lines, that originally other beings, beſides men, had diſobeyed the commands of the Almighty, and that the circumſtance were well known to us, there would fall an *emphaſis* upon the word *man's* in the firſt line, and hence it would be read thus;

> Of *man's* firſt diſobedience, and the fruit, &c.

But if it were a notorious truth, that mankind had tranſgreſſed in a peculiar manner more than once, the *emphaſis* would fall on *firſt*, and the line be read,

> Of man's *firſt* diſobedience, &c.

Again, admitting death (as was really the caſe) to have been an unheard-of and dreadful puniſhment brought upon man in conſequence of his tranſgreſſion; on that ſuppoſition the third line would be read,

Reading.

> Brought *death* into the world, &c.

But if we were to ſuppoſe mankind knew there was ſuch an evil as death in other regions, though the place they inhabited had been free from it till their tranſgreſſion; the line would run thus,

> Brought death into the *world*, &c.

Now from a proper delivery of the above lines, with regard to any one of the ſuppoſitions we have choſen, out of ſeveral others that might in the ſame manner have been imagined, it will appear that the *emphaſis* they illuſtrate is effected by a manifeſt *delay* in the pronunciation, and a tone ſomething *fuller* and *louder* than is uſed in ordinary; and that its office is ſolely to determine the meaning of a ſentence with reference to ſomething ſaid before, preſuppoſed by the author as general knowledge, or in order to remove an ambiguity where a paſſage is capable of having more ſenſes given it than one.

But, ſuppoſing in the above example, that none of the ſenſes there pointed out were preciſely the true one, and that the meaning of the lines were no other than what is obviouſly ſuggeſted by their ſimple conſtruction; in that caſe it may be aſked, if in reading them there ſhould be no word dignified with the emphatical accompaniments above deſcribed?—The anſwer is, Not one with an emphaſis of the *ſame* kind as that we have juſt been illuſtrating; yet it is nevertheleſs true, that on hearing theſe lines well read, we ſhall find ſome words diſtinguiſhed from the reſt by a manner of delivery bordering a little upon it (A). And theſe words will in general be ſuch as ſeem the moſt important in the ſentence, or on other accounts to merit this diſtinction. But as at beſt it only *enforces*, *graces*, or *enlivens*, and not *fixes* the meaning of any paſſage, and even caprice and faſhion (B) have often a hand in determining its place and magnitude, it cannot properly be reckoned an *eſſential* of delivery. However, it is of too much moment to be neglected by thoſe who would wiſh to be good readers; and, for the ſake of diſtinction, we may not

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(A) The following lines will illuſtrate both theſe kinds of ſtreſſes: For, to convey their right meaning, the word ANY is evidently to be pronounced louder and fuller than thoſe with the accents over them.

> Get wéalth and pláce, if poſſible with gráce;
> If not, by ANY meáns get wéalth and pláce. POPE.

This couplet is accented in the manner we find it in the *Eſſay on Elocution* by *Maſon*. And if, according to the judgment of this author, the words thus diſtinguiſhed are to have an emphatical ſtreſs, it muſt be of the inferior kind abovementioned, and which a little farther on we call *emphaſis of force*; while the word ANY in a different type alone poſſeſſes the other ſort of energy, and which is there contradiſtinguiſhed by the term *emphaſis of ſenſe*.

(B) Among a number of people who have had proper opportunities of learning to read in the beſt manner it is now taught, it would be difficult to find two, who, in a given inſtance, would uſe the *emphaſis of force* alike, either as to place or quantity. Nay ſome ſcarce uſe any at all: and others will not ſcruple to carry it *much* beyond any thing we have a precedent for in common diſcourſe; and even now and then throw it upon words ſo very trifling in themſelves, that it is evident they do it with no other view, than for the ſake of the *variety* it gives to the modulation.—This practice, like the introduction of diſcords into muſic, may without doubt be indulged now and then; but were it too frequent, the capital intent of theſe energies would manifeſtly either be deſtroyed or rendered dubious.

Reading. not unaptly denominate both the kinds of energies in queſtion, by the terms *emphaſis of ſenſe*, and *emphaſis of force* (c).

Now from the above account of theſe two ſpecies of emphaſis it will appear, "that in reading, as in ſpeaking, the firſt of them muſt be determined entirely by the *ſenſe* of the paſſage, and always made *alike*: But as to the other, *taſte* alone ſeems to have a right of fixing its ſituation and quantity."—Farther: Since the more eſſential of theſe two energies is ſolely the work of *nature* (as appears by its being *conſtantly* found in the common converſation of people of all kinds of capacities and degrees of knowledge), and the moſt ignorant perſon never fails of uſing it *rightly* in the effuſions of his own heart, it happens very luckily, and ought always to be remembered, that provided we underſtand what we read, and give way to the dictates of our own feeling, the *emphaſis of ſenſe* can ſcarce ever avoid falling ſpontaneouſly upon its proper place.

Here it will be neceſſary to ſay ſomething by way of reply to a queſtion which will naturally occur to the mind of every one. As the rule for the *emphaſis of ſenſe* requires we ſhould underſtand what we read before it can be properly uſed, is it incumbent upon us never to attempt to read what we have not previouſly ſtudied for that purpoſe? In anſwer to this, it muſt be obſerved, that though ſuch a ſtep will not be without its advantages; yet, as from the fairneſs of printed types, the well-known pauſes of punctuation, and a long acquaintance with the phraſeology and conſtruction of our language, &c. experience tells us it is *poſſible* to comprehend the ſenſe at the firſt reading, a previous peruſal of what is to be read does not ſeem *neceſſary* to *all*, though, if they would wiſh to appear to advantage, it may be *expedient* to *many*; and it is this circumſtance which makes us venture upon extemporary reading, and Reading. give it a place among our amuſements.—Similar remarks might be made with regard to *modulation*, *expreſſion*, &c. did not what is here obſerved naturally anticipate them.

III. *Modulation* (d). Every perſon muſt have obſerved, that, in ſpeaking, the voice is ſubject to an alteration of ſound, which in ſome meaſure reſembles the movement of a tune. Theſe ſounds, however, are evidently nothing like ſo much varied as thoſe that are ſtrictly muſical; and we have attempted to ſhow in the preceding chapter, that, beſides this, they have an eſſential difference in themſelves. Nevertheleſs, from the general ſimilitude of theſe two articles, they poſſeſs ſeveral terms in common; and the particular we have now to examine is in both of them called *modulation*. This affection of the voice, being totally *arbitrary*, is differently characterized in different parts of the world; and, through the power of cuſtom, every place is inclined to think their own the only one natural and agreeable, and the reſt affected with ſome barbarous twang or unſeemly variation (e). It may be obſerved, however, that though there is a general uniform caſt or faſhion of modulation peculiar to every country, yet it by no means follows, that there is or can be any thing fixed in its application to particular paſſages; and therefore we find different people will, in any given inſtance, uſe modulations ſomething different, and nevertheleſs be each of them equally agreeable. 4 Modulation.

But, quitting theſe general remarks, we ſhall (as our purpoſe requires it) conſider the properties of modulation a little more minutely.

Firſt, then, we may obſerve, that, in ſpeaking, there is a particular ſound (or *key-note*, as it is often called) in which the modulation for the moſt part runs, and to which

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(c) The firſt of theſe terms anſwers to the *ſimple emphaſis* deſcribed in the *Lectures on Elocution*, and the ſecond *nearly* to what is there called *complex*. The difference lies in this. Under *complex emphaſis* the author ſeems (for he is far from being clear in this article) to include the *tones* ſimply conſidered of all the emotions of the mind; as well the *tender* and *languid*, as the *forcible* and *exulting*. Our term is intended to be confined to ſuch modes of expreſſion alone as are marked with an apparent *ſtreſs* or *increaſe* of the voice.

(d) The author of the *Introduction to the Art of Reading*, not allowing that there is any variation of tone, as to *high* and *low*, in the delivery of a complete period or ſentence, places modulation ſolely in the diverſification of the key-note and the variety of ſyllables, as to *long* or *ſhort*, *ſwift* or *ſlow*, *ſtrong* or *weak*, and *loud* or *ſoft*. As we are of a different opinion, our idea of modulation is confined purely to *harmonious inflexions of voice*. Theſe qualities of words, it is true, add greatly both to the force and beauty of delivery; yet, ſince ſome of them are fixed and not arbitrary (as *long* and *ſhort*), and the others (of *ſwift* and *ſlow*, *ſtrong* and *weak*, *loud* and *ſoft*), may be conſidered as modes of expreſſion which do not affect the modulation as to *tone*, it will agree beſt with our plan to eſteem theſe properties as reſpectively belonging to the eſtabliſhed laws of *pronunciation* and the *imitative* branch of expreſſion mentioned in the end of the enſuing head.

(e) From what accounts we have remaining of the modulation of the ancients, it appears to have been highly ornamented, and apparently ſomething not unlike our modern *recitative*; particularly that of their theatric declamation was muſic in the ſtricteſt ſenſe, and accompanied with inſtruments. In the courſe of time and the progreſs of refinement, this modulation become gradually more and more ſimple, till it has now loſt the genius of muſic, and is entirely regulated by taſte. At home here, every one has heard the *ſing-ſong* cant, as it is called, of

Ti ti dum dum, ti ti dum ti dum de,
Ti dum ti dum, ti dum ti dum dum de;

which, though diſguſtful now to all but mere ruſtics on account of its being out of faſhion, was very probably the favourite modulation in which heroic verſes were recited by our anceſtors. So fluctuating are the taſte and practices of mankind! But whether the power of language over the paſſions has received any advantage from the change juſt mentioned, will appear at leaſt very doubtful, when we recollect the ſtories of its former triumphs, and the inherent charms of muſical ſounds.

Reading.

which its occasional inflexions, either above or below, may in some respects be conceived to have a reference, like that which common music has to its key-note. Yet there is this difference between the two kinds of modulation, that whereas the first always concludes in the key-note, the other frequently concludes a little below it (r). This key-note, in speaking, is generally the sound given at the outset of every complete sentence or period, and it may be observed on some occasions to vary its pitch through the limits of a musical interval of a considerable magnitude. The tones, that fall a little lower than the key at the close of a sentence or period, are called cadences. These cadences, if we are accurate in our distinctions, will, with respect to their offices, be found of two kinds; though they meet so frequently together, that it may be best to conceive them only as answering a double purpose. One of these offices is to assist the sense, and the other to decorate the modulation. An account of the first may be seen in the section on *Pauses*; and the latter will be found to show itself pretty frequently in every thing grave and plaintive, or in poetic description and other highly ornamented language, where the mind is by its influence brought to feel a placid kind of dignity and satisfaction. These two cadences, therefore, may be conveniently distinguished by applying to them respectively the epithets *significant* and *ornamental*.

We have already observed, that reading should in some things differ from speaking; and the particular under consideration seems to be one which ought to vary a little in these arts. For,

Modulation in reading serves a twofold purpose. At the same time that it gives pleasure to the ear on the principles of harmony, it contributes through that medium to preserve the attention. And since written language (when not purely dramatical) is in general more elegant in its construction, and musical in its periods, than the oral one; and since many interesting particulars are wanting in reading, which are present in speaking, that contribute greatly to fix the regard of the hearer; it seems reasonable, in order to do justice to the language, and in part to supply the incitements of attention just alluded to, that in the former of these two articles a modulation should be used something more harmonious and artificial than in the latter. Agreeably to this reasoning, it is believed, we shall find every reader, on a narrow examination, adopt more or less a modulation thus ornamented: though, after all, it must be acknowledged there are better grounds to believe, that the practice has been hitherto directed intuitively by nature, than that it was discovered by the inductions of reason. We shall conclude this head with a rule for modulation in reading. "In every thing dramatic, colloquial, or of simple narrative, let your modulation be the same as in speaking; but when the subject is flowery, solemn, or dignified, add something to its harmony, diversify the key-note, and increase the frequency of cadences in proportion to the merit of the composition."

It will readily be seen, that the precepts here drawn from a comparison between speaking and reading, would be very inadequate, were they left destitute of the assistance of *tone*, and the opportunity of *frequently hearing and imitating masterly readers*. And indeed, to these two great auxiliaries we might very properly have referred the whole matter at once, as capable of giving sufficient directions, had we not remembered that our plan required us to found several of our rules as much on the principles of a philosophical analysis, as on those more familiar ones which will be found of greater efficacy in real practice.

5 Expression as to the tones of the voice.

IV. *Expression.* 1. There is no composition in music, however perfect as to key and melody, but, in order to do justice to the subject and ideas of the author, will require, in the performing, something more than an exact adherence to *tune* and *time*. This something is of a nature, too, which perhaps can never be adequately pointed out by any thing graphic, and results entirely from the taste and feeling of the performer. It is that which chiefly gives music its power over the passions, and characterises its notes with what we mean by the words *sweet*, *harsh*, *dull*, *lively*, *plaintive*, *joyous*, &c. for it is evident every sound, considered abstractedly, without any regard to the movement, or high and low, may be thus modified. In practical music, this commanding particular is called *Expression*; and as we find certain tones analogous to it frequently coalescing with the modulation of the voice, which indicate our passions and affections (thereby more particularly pointing out the meaning of what we say), the term is usually applied in the same sense to speaking and reading.

These tones are not altogether peculiar to man.—Every animal, that is not dumb, has a power of making several of them. And from their being able, unassisted by words, to manifest and raise their kindred emotions, they constitute a kind of language of themselves. In the language of the heart man is eminently conversant; for we not only understand it in one another, but also in many of the inferior creatures subjected by providence to our service.

The expression here illustrated is one of the most essential articles in good reading, since it not only gives a finishing to the sense, but, on the principles of sympathy and antipathy, has also a peculiar efficacy in interesting the heart. It is likewise an article of most difficult attainment; as it appears from what follows, that a masterly reader ought not only to be able to incorporate it with the modulation properly as to *quality*, but in any degree as to *quantity*.

Every thing written being a proper imitation of speech, expressive reading must occasionally partake of all

(r) As musical sounds have always an harmonical reference to a key or fundamental note, and to which the mind is still secretly attending, no piece of music would appear perfect, that did not close in it, and so naturally put an end to expectation. But as the tones used in speech are not musical, and therefore cannot refer harmonically to any other sound, there can be no necessity that this terminating sound (and which we immediately below term the *cadence*) should either be used at all, or follow any particular law as to form, &c. farther than what is imposed by taste and custom.

Reading. all its tones. But from what was ſaid above, of the difference between reading and ſpeaking, it follows, that theſe ſigns of the emotions ſhould be leſs ſtrongly characteriſed in the former article than in the latter. Again, as ſeveral of theſe tones of expreſſion are in themſelves agreeable to the mind, and raiſe in us agreeable emotions (as thoſe of *pity*, *benevolence*, or whatever indicates *happineſs*, and *goodneſs* of heart), and others diſagreeable (as thoſe of a *boiſterous*, *malevolent*, and *depraved* nature, &c.) it farther appears, ſince reading is an art *improving* and not *imitating* nature, that, in whatever degree we abate the expreſſions of the tones above alluded to in the firſt caſe, it would be eligible to make a greater abatement in the latter. But as to the quantities and proportional magnitudes of theſe abatements, they, like many other particulars of the ſame nature, muſt be left ſolely to the taſte and judgment of the reader.

To add one more remark, which may be of ſervice on more accounts than in ſuggeſting another reaſon for the doctrine above. Let it be remembered, that tho' in order to acquit himſelf agreeably in this article of expreſſion, it will be neceſſary every reader ſhould *feel* his ſubject as well as *underſtand* it; yet, that he may preſerve a proper eaſe and maſterlineſs of delivery, it is alſo neceſſary he ſhould guard againſt diſcovering too much emotion and perturbation.

From this reaſoning we deduce the following rule, for the tones which indicate the paſſions and emotions.

"In reading, let all your tones of expreſſion be borrowed from thoſe of common ſpeech, but ſomething more faintly characteriſed. Let thoſe tones which ſignify any diſagreeable paſſion of the mind, be ſtill more faint than thoſe which indicate their contrary; and preſerve yourſelf ſo far from being affected with the ſubject, as to be able to proceed through it with that peculiar kind of eaſe and maſterlineſs, which has its charms in this as well as every other art."

We ſhall conclude this ſection with the following obſervation, which relates to ſpeaking as well as reading. When words fall in our way, whoſe "ſounds ſeem an echo to the ſenſe," as *ſquirr*, *buzz*, *hum*, *rattle*, *hiſs*, *jar*, &c. we ought not to pronounce them in ſuch a manner as to heighten the imitation, except in light and ludicrous ſubjects. For inſtance, they ſhould not in any other caſe be ſounded *ſquir.r.r—buzz.z.z—hum.m.m—r.r.rattle*, &c. On the contrary, when the imitation lies in the *movement*, or *flow and ſtructure of a whole paſſage* (which frequently happens in poetry), the delivery may always be allowed to give a heightening to it with the greateſt propriety; as in the following inſtances, out of a number more which every experienced reader will quickly recollect.

In theſe deep ſolitudes and awful cells,
Where heav'nly-penſive Contemplation dwells,
And ever-muſing Melancholy reigns—
Pope's Eloiſa to Abelard.

With eaſy courſe
The veſſels glide, unleſs their ſpeed be ſtopp'd
By dead calms, that oft lie on theſe ſmooth ſeas.
Dyer's Fleece.

Softly ſweet in Lydian meaſure,
Soon he ſooth'd his ſoul to pleaſure.
Dryden's Ode on St Cecilia's day.

Still gathering force it ſmokes, and, urg'd amain, Reading.
Whirls, leaps, and *thunders down impetuous to the plain.*
Pope's Iliad, B. 13.

For who to dumb forgetfulneſs a prey,
This pleaſing anxious being ere reſign'd,
Left the warm precincts of the cheerful day,
Nor caſt *one longing ling'ring look behind?*
Grey's Elegy.

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2. Beſides the particular tones and modifications of voice above deſcribed, which always accompany and expreſs our inward agitations, nature has in theſe caſes endowed us with another language, which, inſtead of the ear, addreſſes itſelf to the eye, thereby giving the communications of the heart a double advantage over thoſe of the underſtanding, and *us* a double chance to preſerve ſo ineſtimable a bleſſing. This language is what ariſes from the different, almoſt involuntary movements and configurations of the face and body in our emotions and paſſions, and which, like that of tones, every one is formed to underſtand by a kind of intuition. Expreſſion as to the face and geſture.

When men are in any violent agitation of mind, this co-operating *expreſſion* (as it is called) of face and geſture is very ſtrongly marked, and totally free from the mixture of any thing which has a regard to gracefulneſs, or what appearance they may make in the eyes of others. But in ordinary converſation, and where the emotions are not ſo warm, faſhionable people are perpetually inſinuating, into their countenance and action, whatever they imagine will add to the eaſe and elegance of their deportment, or impreſs on the ſpectator an idea of their amiableneſs and breeding. Now, though the abovementioned natural organical ſigns of the emotions ſhould accompany every thing ſpoken, yet from what was obſerved in the introductory part of this article (like the tones we have juſt treated upon), they ſhould in reading be much leſs ſtrongly expreſſed, and thoſe ſuffer the greateſt diminution that are in themſelves the moſt ungainly. And as it was in the laſt ſection recommended to the reader to preſerve himſelf as far from being affected in all paſſionate ſubjects as to be able to keep a temperate command over the various affections of the voice, &c. ſo under the ſanction of this ſubordinate feeling he may accompany his delivery more frequently with any eaſy action or change of face, which will contribute to ſet off his manner, and make it agreeable on the principles of art.

As theſe calm decorations of action (as we may call them) are not altogether natural, but have their riſe from a kind of inſtitution, they muſt be modelled by the practices of the polite. And though mankind differ from one another ſcarce more in any particular than in that of talents for adopting the graceful actions of the body, and hence nothing determinate can be ſaid of their nature and frequency, yet even thoſe, moſt happily calculated to acquit themſelves well in their uſe, might profit by conſidering that it is better greatly to abridge the diſplay, than to over-do it ever ſo little. For the peculiar modeſty of deportment with which the moſt amiable characters are endowed, makes them in common endeavour to ſuppreſs many ſigns of an agitated mind; and in ſuch caſes the bodily ones in particular are very ſparingly uſed. They have alſo a natural and rooted diſlike to any kind of affectation; and to no

ſpecies,

Reading.

species, that we can recollect, a greater, than to that which is seen in a person who pretends to mimicry and exactly gesture, without possessing the advantages and talents they require; and of which not many people, comparatively speaking, have any remarkable share.

The inference of this is too obvious to need drawing out, and we would particularly recommend it to the consideration of those readers who think the common occurrences of a newspaper, &c. cannot be properly delivered without a good deal of elbow-room.

Although it is impossible to come to particulars in any directions of this kind, yet there is one article of our present subject on which a serviceable remark may be made. In ordinary discourse, when we are particularly pressing and earnest in what we say, the eye is naturally thrown upon those to whom we address ourselves; And in reading, a turn of this organ now and then upon the hearers, when any thing very remarkable or interesting lies in the way, has a good effect in gaining it a proper attention, &c. But this should not be too frequently used; for if so, besides its having a tendency to confound the natural importance of different passages, it may not be altogether agreeable to some to have their own reflections broken in upon by a signal, which might be interpreted to hint at their wanting regulation.

One observation more, and then we shall attempt to recapitulate the substance of this section in the form of a precept. Though it is, when strictly examined, inconsistent, both in speaking and reading, to imitate with action what we are describing, yet as in any thing *comic* such a practice may suggest ideas that will *accord* with those of the subject, it may there be now and then indulged in either of these articles.

"In a manner similar to that directed with regard to tones, moderate your bodily expression of the signs of the emotions. And in order to supply, as it were, this deficiency, introduce into your carriage such an easy gracefulness, as may be consistent with your acquirements in these particulars, and the necessary dread which should ever be present of falling into any kind of affectation or grimace."

V. *Pauses*. Speech consisting of a succession of distinct words, must naturally be liable (both from a kind of accident, and a difficulty there may be in beginning certain sounds or portions of phrases immediately on the ending of certain others) to several small intermissions of voice; of which, as they can have no meaning, nothing farther need here be said. There are, however, some pauses, which the sense necessarily demands; and to these the substance of this section is directed.

The pauses are in part to distinguish the members of sentences from one another, the terminations of complete periods, and to afford an opportunity for taking breath. Besides this, they have a very graceful effect in the modulation, on the same account they are so essential in music.—In both articles, like blank spaces in pictures, they set off and render more conspicuous whatsoever they disjoin or terminate.

Were language made up of nothing but short colloquial sentences, these pauses, though they might do no harm, and would generally be graceful, would however be superseded as to use by the completeness and *narrowness*, as we may say, of the meaning. But in more diffuse language, composed of several detached sentences, and which require some degree of attention in order to take in the sense, the intermissions of voice under consideration are of the greatest service, by signifying to the mind the progress and completion of the whole passage. Now, though in extensive and differently formed periods there may be members whose completeness of sense might be conceived of various degrees, and hence might seem to require a set of pauses equally numerous; yet, since the sense does not altogether depend upon these intermissions, and their ratios to one another, if capable of being properly defined, could not be accurately observed, grammarians have ventured to conceive the whole class of pauses as reducible to the four or five kinds now in use, and whose marks and ratios are well known (c); presuming that under the eye of taste; and with the assistance of a particular to be next mentioned, they would not fail in all cases to suggest intermissions of voice suitable to the sense. But in many of these extensive and complex periods, rounded with a kind of redundancy of matter, where the full sense is long suspended, and the final words are not very important, there would be some hazard of a misapprehension of the termination, had we not more evident and infallible notice of it than that which is given by the pause. This notice is the *cadence*, referred to in the section on *Modulation*; which, as is there observed, besides the ornamental variety it affords, appears from these remarks to be a very necessary and serviceable article in perspicuous delivery.

As this cadence naturally accompanies the end of every entire sense, circumstanced as abovementioned, it may sometimes fall before the *semicolon*, but more generally before the *colon*, as well as the period: For these marks are often found to terminate a complete sense; and in these cases, the relation what follows has to what went before, is signified to the mind by the relative shortness of the stop, and the form of introducing the additional matter. Nor can any bad conse-

quence

(c) Supposing the *comma* (,) one *time*, the *semicolon* (;) will be two; the *colon* (:) three, and the *period* (.) as also the marks of *interrogation* (?) and *admiration* (!) four of these times. The blank line (— or --), and the *breaks* between *paragraphs*, intimate still greater times; and by the same analogy may be reckoned a double and quadruple period respectively. Now and then these blank lines are placed immediately *after* the ordinary points, and then they are conceived only as separating for the *eye* the different natures of the matter;—as a question from an answer,—precept from example,—premises from inferences, &c. in which case their import is evident. But of late some authors have not scrupled to confound these distinctions; and to make a blank serve for all the pauses universally, or the mark of an indefinite rest, the quantity of which is left to the determination of the reader's taste. A practice, it is imagined, too destructive of the intended precision of these typical notices to be much longer adopted.

Reading. quence arise from thus founding distinctions on ratios of time, which it may be said are too nice to be often rightly hit upon: for if a confusion should happen between that of the *colon* and *period*, there is perhaps so trifling a difference between the nature of the passages they succeed, as to make a small inaccuracy of no consequence. And as to the rests of the semicolon and period, it will not be easy to mistake about them, as their ratio is that of two to one. Add to this the power which the matter and introduction of the subsequent passages have to rectify any slight error here made, and we shall be fully satisfied, that the pauses as usually explained, with the cadence above described, and a proper knowledge of the language, will convey sufficient information to the understanding of the constructive nature of the passages after which they are found.

It may be observed, that in natural speech, according to the warmth and agitation of the speaker, the rests are often short and injudiciously proportioned, and hence that every thing thus delivered cannot be so graceful as it might have been from a proper attention to their magnitude and effects.

Pauses then, though chiefly subjected to the sense, are, as was remarked at the outset, serviceable in beautifying the modulation, &c.—And since books, are often inaccurately printed as to points, and people's tastes differ some little about their place and value, it appears, that, "although in reading great attention should be paid to the stops, yet a greater should be given to the sense, and their correspondent times occasionally lengthened beyond what is usual in common speech;" which observation contains all that we shall pretend to lay down by way of rule for the management of pauses in the delivery of written language.

As there are two or three species of writing, which have something singular in them, and with regard to the manner in which they should be read, a few *particular* remarks seem necessarily required, we shall conclude this article with laying them before the reader:

1. Of PLAYS, and such like CONVERSATION-PIECES. Writings of this kind may be considered as intended for two different purposes; one to unfold subject matter for the exercise of theatric powers; and the other to convey amusement, merely as fable replete with pleasing incidents and characteristic manners. Hence there appears to be great latitude for the display of a *consistent* delivery of these performances: for while, on one hand, a good reader of very inferior talents for mimicry may be heard with a tolerable degree of pleasure; on the other, if any person is qualified to give a higher degree of life and force to the dialogue and characters by delivering them as an actor, he must be fully at liberty to start from the confinement of a chair to a posture and area more suited to his abilities; and, if he be not deceived in himself, his hearers will be considerable gainers by the change.—The next article is,

2. SERMONS or other ORATIONS, which in like manner may be conceived intended for a double purpose. First, as matter for the display of oratorical powers; and, secondly, as persuasive discourses, &c. which may be read like any other book. Therefore it appears (for reasons similar to those above) that according as clergymen are possessed of the talents of elocution, they may consistently either rehearse their sermons, in the manner of an extemporary harangue, or deliver them in the more humble capacity of one who is content to entertain and instruct his hearers with reading to them his own or some other person's written discourse. Reading.

That either of these manners of delivery (or a mixture of them), in either of the cases abovementioned, is agreeable, we find on a careful examination. For this will show us how frequently they run into one another; and that we are so far from thinking such transitions wrong, that, without a particular attention that way, we scarce ever perceive them at all.

3. POETRY is the next and last object of our present remarks. This is a very peculiar kind of writing, and as much different from the language of ordinary discourse as the movements of the dance are from common walking. To ornament and improve whatever is subservient to the pleasures and amusements of life, is the delight of human nature. We are also pleased with a kind of *excess* in any thing which has a power to amuse the fancy, inspire us with enthusiasm, or awaken the soul to a consciousness of its own importance and dignity. Hence one pleasure, at least, takes its rise, that we feel in contemplating the performances of every art; and hence the language of poetry, consisting of a measured rythmus, harmonious cadences, and an elevated picturesque diction, has been studied by the ingenious, and found to have a powerful influence over the human breast in every age and region. There is such an affinity between this language and music, that they were in the earlier ages never separated; and though modern refinement has in a great measure destroyed this union, yet it is with some degree of difficulty in rehearsing these divine compositions we can forget the singing of the muse.

From these considerations (and some kindred ones mentioned in sect. iii.) in repeating verses, they are generally accompanied with a modulation rather more ornamented and musical than is used in any other kind of writing. And accordingly, as there seems to be the greatest propriety in the practice, the rule for this particular in the section just referred to, will allow any latitude in it that can gain the sanction of taste and pleasure.

Rhymes in the lighter and more soothing provinces of poetry are found to have a good effect; and hence (for reasons like those just suggested) it is certainly absurd to endeavour to smother them by a feeble pronunciation, and running one line precipitately into another, as is often affected to be done by many of our modern readers and speakers. By this method they not only destroy one source of pleasure intended by the composer (which though not great is nevertheless genuine), but even often supply its place with what is really disagreeable, by making the rhymes, as they are interruptedly perceived, appear accidental blemishes of a different style, arising from an unmeaning recurrence of similar sounds. With regard then to reading verses terminated with rhyme, the common rule, which directs to pronounce the final words *full*, and to distinguish them by a slight pause even where there is none required by the sense, seems the most rational, and consequently most worthy, of being followed. See DECLAMATION, NARRATION, and ORATORY.

READING, a town of Berkshire in England, pleasantly seated on the river Kenneth, near the confluence with the Thames. It had once a fine rich monastery, of which there are large ruins remaining. It had also a castle

Readings [illegible]

castle built by king Henry I. but it was afterwards levelled with the ground. It is a corporation, enjoys several privileges, and sends two members to parliament. The two navigable rivers render it a fit place for trade. W. Long. 1. [illegible]. N. Lat. 51. 25.

READING, a post-town of Pennsylvania, and capital of Berks county; situated on the N. E. side of the river Schuylkill. It is regularly laid out, and contains about [illegible] houses, a stone jail, court-house, a church for German Lutherans, one for Calvinists, one for Quakers, and one for Roman Catholics; also a large building for the public offices. It is chiefly inhabited by Germans. This town is remarkable for the manufacture of wool hats, which is carried on largely by individuals. Contiguous to the town is a remarkable spring, which is one hundred feet square, and 140 feet deep, with a stream of water issuing from it large enough to turn a mill, and affording an abundance of fish: the water is clear and transparent. A court of quarter sessions and common pleas is held here the first Monday in January, April, and November. It is 54 miles N. W. of Philadelphia. W. Lon. 75. 54. N. Lat. 40. 21.

READINGS, or *Various Readings*, in criticism, are the different manner of reading the texts of authors in ancient manuscripts, where a diversity has arisen from the corruption of time, or the ignorance of copyists. A great part of the business of critics lies in settling the readings by confronting the various readings of the several manuscripts, and considering the agreement of the words and sense.

Readings are also used for a sort of commentary or gloss on a law, text, passage, or the like, to show the sense an author takes it in, and the application he conceives to be made of it.

RE-AGGRAVATION, in the Romish ecclesiastical law, the last monitory, published after three admonitions, and before the last excommunication. Before they proceed to fulminate the last excommunication, they publish an aggravation, and a re-aggravation. Fevret observes, that in France the minister is not allowed to come to re-aggravation, without the permission of the bishop or official, as well as that of the lay-judge. See EXCOMMUNICATION.

REAL (Cæsar Vichard de St), a polite French writer, son of a counsellor to the senate of Chamberry in Savoy. He came young to France, distinguished himself at Paris by several ingenious productions, and resided there a long time without title or dignity, intent upon literary pursuits. He died at Chamberry in 1692, advanced in years, though not in circumstances. He was a man of great parts and penetration, a lover of the sciences, and particularly fond of history. A complete edition of his works was printed at Paris, in 3 vols 4to, 1745, and another in 6 vols 12mo.

Real Presence. See TRANSUBSTANTIATION.

REALGAR. See CHEMISTRY, n° 1279.

REALITY, in the schools, a diminutive of *res*, "thing," first used by the Scotists, to denote a thing which may exist of itself; or which has a full and absolute being of itself, and is not considered as a part of any other.

REALM, a country which gives its head or governor the denomination of a *king*.

RE-ANIMATION means the reviving or restoring to life those who are apparently dead. Sudden death is dreaded by every human being, and it is one of those evils against which the Church of England prays in her Litany. Accidents, however, cannot always be prevented; but, after they have happened, it is often possible to prevent their effects. This, by the establishment of what with great propriety has been called the *Humane Society*, has been abundantly proved: for, in the course of 12 years immediately after their institution, they were the means of saving the lives of 850 persons, who otherwise would in all human probability have been lost to the community. Since that period, they have saved many more; and various persons, in different countries of the world, by following their directions, have done the same. To preserve one human being from premature death, we must consider as of the utmost consequence both as citizens and Christians; how much more the preservation of thousands. It appears from the writings of Doctors Mead, Winslow, Bruhier, Fothergill, Haller, Lecat, Tissot, Van Engelen, Gummer, and others, that they had prepared the way for institutions similar to the Humane Society: for in their works they have elucidated the principles on which they go, and furnished directions for the practice they favour. See DEATH, *Premature Interment*, and DROWNING.

Rear || Reaumur.

REAR, a term frequently used in composition, to denote something behind, or backwards, in respect of another; in opposition to *van*.

Rear of an Army, signifies, in general, the hindermost part of an army, battalion, regiment, or squadron; also the ground behind either.

Rear-Guard, is that body of an army which marches after the main-body; for the march of an army is always composed of an advance-guard, a main-body, and a rear-guard: the first and last commanded by a general. The old grand-guards of the camp always form the rear-guard of the army, and are to see that every thing come safe to the new camp.

Rear Half-files, are the three hindmost ranks of the battalion, when it is drawn up six deep.

Rear-Line, of an army encamped, is always 1200 feet at least from the centre line; both of which run parallel to the front line, as also to the reserve.

Rear-Rank, is the last rank of a battalion, when drawn up, and generally 16 or 18 feet from the centre-line when drawn in open order.

REASON, a faculty or power of the mind, whereby it distinguishes good from evil, truth from falsehood. See METAPHYSICS.

REASONING, RATIOCINATION, the exercise of that faculty of the mind called *reason*; or it is an act or operation of the mind, deducing some unknown proposition from other previous ones that are evident and known. See LOGIC, Part III.

REAUMUR (Rene Antoine Ferchault, Sieur de), a person distinguished for his laborious researches into natural knowledge, was born at Rochelle in 1683, of a family belonging to the law. After having finished his early studies in the place of his birth, he began a course of Philosophy at Poitiers, and of civil law at Bourges; but soon relinquished the latter, to apply himself, according to his taste, to mathematics, physics, and natural history. Being come to Paris, he was received into the Academy of Sciences in 1708. From that hour he was wholly employed in natural history, to which his inclination

Reaumur. clination particularly led him, and his inquiries were not confined to any one part of it. His memoirs, his obſervations, his diſcoveries on the formation of ſhells, ſpiders, muſcles, the marine flea, the berry which affords the purple colour, and on the cauſe of the numbneſs of the torpedo, excited the curioſity of the public, and early procured our author the character of an able, curious, and entertaining naturaliſt. Filled with zeal for the welfare and advantage of ſociety, and the progreſs and perfection of arts, he endeavoured in all his reſearches to promote the public good. We were indebted to him for the diſcovery of the Turquois mines in Languedoc. He alſo found out a ſubſtance, which is uſed to give falſe ſtones a colour, which is obtained from a certain fiſh called in the French *Aile* or *Ablete** on account of its whiteneſs, and which is the *Bleak* or *Blay* of our writers †. His experiments on the art of turning iron into ſteel obtained him a penſion of 12,000 livres; and this reward has been continued to the Academy to ſupport the expence which might accrue in this art.

* See Belon, 349.; and Pennant's Zoology, vol. iii. p. 315.

† See Cyprinus, n° 9.

He continued his inquiries on the art of making tin and porcelain‡, and endeavoured to render our thermometers more uſeful than thoſe of former times: he compoſed a curious hiſtory of rivers where gold duſt is found in France; and gave ſo ſimple and eaſy a detail of the art of gathering this duſt, that perſons have been employed for that purpoſe.

‡ See Porcelain.

He alſo made curious and important obſervations on the nature of flints, on the banks of foſſil ſhells, from whence is obtained in Touraine an excellent manure for land; as likewiſe on birds and their preſervation, on their method of building neſts; on inſects; and a great number of other ſubjects, not leſs curious than uſeful.

He imagined at firſt, that a certain varniſh would keep eggs freſh; but the waſte of time and money, &c. ſhowed him the inconveniences of ſuch a proceſs. He afterwards adopted the method practiſed for time immemorial in Greece and the iſlands of the Archipelago, which is to ſteep or immerſe eggs in oil, or melted fat; by this means, not being expoſed to the air or to froſt, they are well preſerved, and contract no bad ſmell. Another experiment ſtill more important, made by our author, was to introduce into France the art of hatching fowls and birds, as practiſed in Egypt, without covering the eggs. Active, ſedulous, and attentive, he was early in his ſtudy, often at ſix in the morning. Exact in his experiments and obſervations, he let no circumſtance eſcape him. His writings muſt be of great uſe to future philoſophers. In ſociety, he was diſtinguiſhed through life for his modeſt and agreeable behaviour. His probity, benevolence, goodneſs of heart, and other amiable qualities, as well natural as acquired, endeared him to his countrymen. He died in the 75th year of his age, on the 18th of October 1757, and left this world filled with ſentiments of piety. His death was the conſequence of a fall, which happened at the caſtle of Barnardiere on the Maine, where he went to paſs his vacation. He bequeathed to the Academy of Sciences his manuſcripts and all his natural productions. His works are, 1. A very great number of memoirs and obſervations on different parts of natural hiſtory; they are printed in the collections of the Academy of Sciences. 2. A large work printed ſeparately in 6 vols in 4to, intitled, A Natural Hiſtory of Inſects. This important work contains a deſcription of vaſt numbers of caterpillars, moths, gall inſects, flies with two and four wings, lady-birds, and thoſe ephemeron flies which live only in that form a few hours; and laſtly, of thoſe ſingular and wonderful inſects which are called *polypes*, which being cut into ſeveral pieces, each piece lives, grows, and becomes an inſect, and affords to our eyes a great number of prodigies*. The works of M. de Reaumur are exact, curious, intereſting, and very ingenious. They are written with much candour, clearneſs, and elegance; but it muſt be acknowledged his manner is ſomewhat too diffuſe. But we muſt not deceive the reader; he often raiſes our expectations, and does not give us all the ſatisfaction we promiſe ourſelves from his writings. His method of raiſing poultry, in particular, rather diſappoints us. He ſpared neither care, time, nor expence, to render it practicable: he flattered himſelf and his countrymen with the greateſt hopes; but notwithſtanding his aſſiduous induſtry, and vaſt charges, it proved abortive. The late M. l'Advocat recommended him to obtain better information from Egypt on the ſubject; and if poſſible to procure a perſon verſed in the art to inſtruct him in it; but his death prevented the completion of the ſcheme. If the native of Egypt had arrived, ſhowed M. de Reaumur a better method than his own, and practiſed it with ſucceſs, as in his country, the community would have been benefited; on the other hand he would have ſeen, had it failed, that the climate of France was not proper for ſuch experiments. M. Maillet, conſul at Cairo, to whom Monſieur the regent had written to obtain the art, offered to ſend over a native of Egypt, if the government would pay the expence of his voyage, and allow him a penſion of 1500 livres. M. Maillet rightly judged, when he preferred this method of proceeding. M. de Reaumur was not ignorant of the deſign; but he flattered himſelf, that his efforts would be ſucceſsful without further aid, and thought he ſhould acquire ſome honour. He certainly had great talents, induſtry, ſagacity, and every other requiſite which are neceſſary in ſuch attempts; but it is morally impoſſible that a ſingle man, in a different climate, can attain ſuch knowledge in an art as thoſe who live in a more favourable country, and have had the experience of many ages to profit by: however M. de Reaumur may have been unſucceſsful, poſterity is indebted to him for his repeated trials. He has removed ſome difficulties in the road, and thoſe that travel it may diſcover what he only ſaw at a diſtance.

* See Polypus.

REAUMURIA, it botany: A genus of the pentagynia order, belonging to the pentandria claſs of plants; and in the natural method ranking under the 13th order, *Succulentæ*. The calyx is hexaphyllous, and there are five petals; the capſule is unilocular, quinquevalved, and polyſpermous.

REBATE, or REBATEMENT, in commerce, a term much uſed at Amſterdam for an abatement in the price of ſeveral commodities, when the buyer, inſtead of taking time, advances ready money.

REBATEMENT, in heraldry, a diminution or abatement, of the bearings in a coat of arms. See ABATEMENT.

REBELLION, *Rebellio*, among the Romans, was where thoſe who had been formerly overcome in battle, and yielded to their ſubjection, made a ſecond reſiſtance: but in England it is generally uſed for the taking

up [illegible] traitorously against the king, whether by natural [illegible], or others who once [illegible]; and the word [illegible] is sometimes applied to him who wilfully breaks a law; also to a vassal disobeying his lord.

[illegible] is a difference between enemies and rebels. [illegible] those who are out of the king's allegiance: [illegible] the subjects of the king, either in open war, or [illegible] to the king's enemies but traitors. And [illegible] Prince of Wales, who levied war against Edw. I. [illegible] he was without the allegiance of the king, had [illegible] proclamation made him as a traitor and rebel. Private persons may arm themselves to suppress rebels, enemies, &c.

REBELLIOUS assembly, is a gathering together of two persons or more, intending or going about to put in execution or put in use unlawfully, of their own authority, any thing to change the law or statutes of the realm; or to destroy the inclosures of any ground, or banks of any fish-pond, pool, or conduit, to the intent the same fish be waste and void; or to destroy the deer in any park, or any warren of conies, dove-houses, or fish in ponds; or any house, barns, mills, or bays; or to burn stacks of corn; or abate rents, or prices of victuals, &c.

REBUS, an enigmatical representation of some name, &c. by using figures or pictures instead of words, or parts of words. Camden mentions an instance of this kind of wit in a gallant who expressed his love to a woman named *Rose Hill*, by painting in the border of his gown a rose, a hill, an eye, a loaf, and a well; which, in the style of the rebus, reads, "*Rose Hill I love well.*" This kind of wit was long practised by the great, who took the pains to find devices for their names. It was, however, happily ridiculed by Ben Johnson, in the humourous description of Abel Drugger's device in the Alchemist; by the Spectator, in the device of Jack of Newberry; at which time the rebus, being raised to sign-posts, was grown out of fashion at court.

REBUS is also used by the chemical writers sometimes to signify sour milk, and sometimes for what they call the ultimate matter of which all bodies are composed.

REBUS, in heraldry, a coat of arms which bears an allusion to the name of the person; as three castles, for Castleton; three cups, for Butler; three conies, for Conisby; a kind of bearings which are of great antiquity.

REBUTTER (from the Fr. *bouter* i. e. *repellere*, to put back or bar), is the answer of defendant to plaintiff's *surrejoinder*; and plaintiff's answer to the rebutter is called a *surrebutter*: but it is very rare the parties go so far in pleading.

Rebutter is also where a man by deed or fine grants to warranty any land or hereditament to another; and the person making the warranty, or his heir, sues him to whom the warranty is made, or his heir or assignee, for the same thing; if he who is so sued plead the deed or fine with warranty, and pray judgment, if the plaintiff shall be received to demand the thing which he ought to warrant to the party against the warranty in the deed, &c. this is called a *rebutter*. And if I grant to a tenant to hold without impeachment of waste, and afterwards implead him for waste done, he may debar me of this action by shewing my grant, which is a rebutter.

RECAPITULATION, is a summary, or a concise and transient enumeration of the principal things insisted on in the preceding discourse, whereby the force of the whole is collected into one view. See ORATORY, n° 37 and 127. Recapitulation ‖ Reciprocal.

RECEIPT, or RECEIT, in commerce, an acquittance, or discharge, in writing, intimating that the party has received a certain sum of money, either in full for the whole debt, or in part, or on account.

RECEIVER, in pneumatics, a glass vessel for containing the thing on which an experiment in the air-pump is to be made.

RECEIVER, *receptor* or *receptator*, in English law, is commonly understood in a bad sense, and used for such as knowingly receive stolen goods from thieves, and conceal them. This crime is felony, and the punishment is transportation for 14 years.

RECENSIO was an account taken by the censors, every lustrum, of all the Roman people. It was a general survey, at which the equites as well as the rest of the people, were to appear. New names were now put upon the censor's list, and old ones cancelled. The *recensio*, in short, was a more solemn and accurate sort of *probatio*, and answered the purpose of a review, by shewing who were fit for military service.

RECEPTACULUM, in botany, one of the seven parts of fructification, defined by Linnæus to be the base which connects or supports the other parts.

Receptaculum Chyli, or *Pecquet's Reservatory*, the reservoir or receptacle for the chyle, situated in the left side of the upper vertebra of the loins, under the aorta and the vessels of the left kidney.

RECHABITES, a kind of religious order among the ancient Jews, instituted by Jonadab the son of Rechab, comprehending only his own family and posterity. Their founder prescribed them three things: first, not to drink any wine; secondly, not to build any houses, but to dwell in tents; and thirdly, not to sow any corn, or plant vines.

The Rechabites observed these rules with great strictness, as appears from Jer. xxxv. 6. &c. Whence St Jerome, in his 13th epistle to Paulinus calls them *monachi, monks*, Jonadab, their founder, lived under Jehoash, king of Judah, contemporary with Jehu king of Israel; his father Rechab, from whom his posterity were denominated descended from Raguel or Jethro, father-in-law to Moses, who was a Kenite, or of the race of Ken: whence Kenite and Rechabite are used as synonymous in Scripture.

RECHEAT, in hunting, a lesson which the huntsman plays on the horn, when the hounds have lost their game, to call them back from pursuing a counter scent.

RECIPE, in medicine, a prescription, or remedy, to be taken by a patient: so called because always beginning with the word *recipe*, i. e. *take*; which is generally denoted by the abbreviature ℞.

RECIPROCAL, in general, something that is mutual, or which is returned equally on both sides, or that affects both parties alike.

Reciprocal Terms, among logicians, are those which have the same signification; and consequently are convertible, or may be used for each other.

RECIPROCAL, in mathematics, is applied to quantities

Reciprocal ties which multiplied together produce unity. Thus $\frac{1}{x}$ and x, y and $\frac{1}{y}$, are reciprocal quantities. Likewise $\frac{1}{x}$ is said to be the reciprocal of x, which is again the reciprocal of $\frac{1}{x}$.

Recluse.

Reciprocal Figures, in geometry, those which have the antecedents and consequents of the same ratio in both figures.

Reciprocal Proportion, is when in four numbers the fourth is less than the second by so much as the third is greater than the first, and *vice versâ*. See Proportion and Arithmetic, chap. vi. Great use is made of this reciprocal proportion by Sir Isaac Newton and others, in demonstrating the laws of motion.

RECITAL, in law, means the rehearsal or making mention in a deed or writing of something which has been done before.

RECITATIVO, or Recitative, in music, a kind of singing, that differs but little from ordinary pronunciation; such as that in which the several parts of the liturgy are rehearsed in cathedrals; or that wherein the actors commonly deliver themselves at the theatre or the opera, when they are to express some action or passion; to relate some event; or reveal some design.

RECKENHAUSEN, a strong town of Cologne, in Germany, in the middle territory of that name. The abbess of its nunnery has power of punishing offenders with death, and she alone is obliged to the vow of chastity.

RECKONING, or a *Ship's Reckoning*, in navigation, is that account whereby at any time it may be known where the ship is, and on what course or courses she is to steer, in order to gain her port; and that account taken from the log-board is called the *dead reckoning*. See Navigation.

RECLAIMING, or Reclaming, in the ancient customs, a lord's pursuing, prosecuting, and recalling, his vassal, who had gone to live in another place without his permission.

Reclaiming is also used for the demanding of a person, or thing, to be delivered up to the prince or state to which it properly belongs; when, by any irregular means, it is come into another's possession.

Reclaiming, in falconry, is taming a hawk, &c. and making her gentle and familiar.

A partridge is said to reclaim, when she calls her young ones together, upon their scattering too much from her.

RECLINATION of a plane in dialling. See Dialling.

RECLUSE, among the Papists, a person shut up in a small cell of an hermitage, or monastery, and cut off, not only from all conversation with the world but even with the house. This is a kind of voluntary imprisonment, from a motive either of devotion or penance.

The word is also applied to incontinent wives, whom their husbands procure to be thus kept in perpetual imprisonment in some religious house.

Recluses were anciently very numerous. They took an oath never to stir out of their retreat: and having entered it, the bishop set his seal upon the door; and the recluse was to have every thing necessary for the support of life conveyed to him through a window. If he was a priest, he was allowed a small oratory, with a window, which looked into the church, through which he might make his offerings at the mass, hear the singing, and answer those who spoke to him; but this window had curtains before it, so that he could not be seen. He was allowed a little garden, adjoining to his cell, in which he might plant a few herbs, and breathe a little fresh air. If he had disciples, their cells were contiguous to his, with only a window of communication, thro' which they conveyed necessaries to him, and received his instructions. If a recluse fell sick, his door might be opened for persons to come in and assist him, but he himself was not to stir out.

Recognition ‖ Reconnoitre.

RECOGNITION, in law, an acknowledgement: a word particularly used in the law-books for the first chapter of the statute 1 Jac. I. by which the parliament acknowledged, that, after the death of queen Elisabeth, the crown had rightfully descended to king James.

RECOGNIZANCE, in law, is an obligation of record, which a man enters into before some court of record or magistrate duly authorised, with condition to do some particular act; as to appear at the assizes, to keep the peace, to pay a debt, or the like. It is in most respects like another bond: the difference being chiefly this, that the bond is the creation of a fresh debt or obligation *de novo*, the recognizance is an acknowledgement of a former debt upon record; the form whereof is, "that A. B. doth acknowledge to owe to our lord the king, to the plaintiff, to C. D. or the like, the sum of ten pounds," with condition to be void on performance of the thing stipulated: in which case the king, the plaintiff, C. D. &c. is called the cognizee, *is cui cognoscitur*; as he that enters into the recognizance is called the cognizor, *is qui cognoscit*. This being certified to, or taken by the officer of some court, is witnessed only by the record of that court, and not by the party's seal: so that it is not in strict propriety a deed, though the effects of it are greater than a common obligation; being allowed a priority in point of payment, and binding the lands of the cognizor from the time of enrolment on record.

RECOIL, or Rebound, the starting backward of a fire-arm after an explosion. Mersennus tells us, that a cannon 12 feet in length, weighing 6400 lb. gives a ball of 24 lb. an uniform velocity of 640 feet *per* second. Putting, therefore, $W = 6400$, $w = 14$, $V = 640$, and $v =$ the velocity with which the cannon recoils; we shall have (because the momentums of the cannon and ball are equal) $W\,v = w\,V$; and so $v = \frac{wV}{W} = \frac{24 \times 64}{6400} = 2{,}4$; that is, it would recoil at the rate of $2\frac{4}{10}$ feet *per* second, if free to move.

RECOLLECTION, a mode of thinking, by which ideas sought after by the mind are found and brought to view.

RECONNOITRE, in military affairs, implies to view and examine the state of things in order to make a report thereof.

Parties ordered to reconnoitre are to observe the country and the enemy; to remark the routes, conveniences, and inconveniences of the first; the position, march, or forces of the second. In either case, they should have an expert geographer, capable of taking plans,

Record Recovery.

plans readily: he ſhould be the beſt mounted of the whole, in caſe the enemy happen to ſcatter the eſcorte, that he may take his works and ideas. See WAR.

RECORD, an authentic teſtimony in writing, contained in rolls of parchment, and preſerved in a court of record. See COURT.

Trial by Record, a ſpecies of trial which is uſed only in one particular inſtance: and that is where a matter of record is pleaded in any action, as a fine, a judgment, or the like; and the oppoſite party pleads, *nul tiel record*, that there is no ſuch matter of record exiſting. Upon this iſſue is tendered and joined in the following form, "and this he prays may be inquired of by the record, and the other doth the like;" and thereupon the party pleading the record has a day given him to bring it in, and proclamation is made in court for him to "bring forth the record by him in pleading alleged, or elſe he ſhall be condemned;" and, on his failure, his antagoniſt ſhall have judgment to recover. The trial, therefore, of this iſſue, is merely by the record: for, as Sir Edward Coke obſerves, a record or enrolment is a monument of ſo high a nature, and importeth in itſelf ſuch abſolute verity, that if it be pleaded that there is no ſuch record, it ſhall not receive any trial by witneſs, jury, or otherwiſe, but only by itſelf. Thus titles of nobility, as whether earl or not earl, baron or not baron, ſhall be tried by the king's writ or patent only, which is matter of record. Alſo in caſe of an alien, whether alien friend or enemy, ſhall be tried by the league or treaty between his ſovereign and ours; for every league or treaty is of record. And alſo, whether a manor be held in ancient demeſne or not, ſhall be tried by the record of domeſday in the king's exchequer.

RECORDER, a perſon whom the mayor and other magiſtrates of a city or corporation aſſociate to them, for their better direction in matters of juſtice and proceedings in law; on which account this perſon is generally a counſellor, or other perſon well ſkilled in the law.

The recorder of London is choſen by the lord mayor and aldermen; and as he is held to be the mouth of the city, delivers the judgment of the courts therein, and records and certifies the city-cuſtoms. See LONDON, n° 38.

RECOVERY, or *Common Recovery*, in Engliſh law, a ſpecies of aſſurance by matter of record; concerning the original of which it muſt be remarked, that common recoveries were invented by the eccleſiaſtics to elude the ſtatutes of mortmain (ſee TAIL); and afterwards encouraged by the fineſſe of the courts of law in 12 Edward IV. in order to put an end to all fettered inheritances, and bar not only eſtates-tail, but alſo all remainders and reverſions expectant thereon. We have here, therefore, only to conſider, firſt, the *nature* of a common recovery; and, ſecondly, its *force* and *effect*.

Blackſt. Comment. 1. A common recovery is a ſuit or action, either actual or fictitious: and in it the lands are recovered againſt the tenant of the freehold; which recovery, being a ſuppoſed abjudication of the right, binds all perſons, and veſts a free and abſolute fee-ſimple in the recoverer. To explain this as clearly and conciſely as poſſible, let us, in the firſt place, ſuppoſe David Edwards to be tenant of the freehold, and deſirous to ſuffer a common recovery, in order to bar all entails, remainders, and reverſions, and to convey the fame in fee-ſimple, to Francis Golding. To effect this, Golding is to bring an action againſt him for the lands; and he accordingly ſues out a writ called a *præcipe quod reddat*, becauſe theſe were its initial or moſt operative words when the law-proceedings were in Latin. In this writ the demandant Golding alleges, that the defendant Edwards (here called the tenant) has no legal title to the land; but that he came into poſſeſſion of it after one Hugh Hunt had turned the demandant out of it. The ſubſequent proceedings are made up into a record or recovery roll, in which the writ and complaint of the demandant are firſt recited: whereupon the tenant appears, and calls upon one Jacob Morland, who is ſuppoſed, at the original purchaſe, to have warranted the title to the tenant; and thereupon he prays, that the ſaid Jacob Morland may be called in to defend the title which he ſo warranted. This is called the *voucher*, "vocatio," or calling of Jacob Morland to warranty; and Morland is called the *vouchee*. Upon this Jacob Morland, the vouchee, appears, is impleaded, and defends the title. Whereupon Golding the demandant deſires leave of the court to imparl, or confer with the vouchee in private; which is (as uſual) allowed him. And ſoon afterwards the demandant Golding returns to court; but Morland the vouchee diſappears, or makes default. Whereupon judgment is given for the demandant Golding, now called the *recoverer*, to recover the lands in queſtion againſt the tenant Edwards, who is now the recoveree: and Edwards has judgment to recover of Jacob Morland lands of equal value, in recompenſe for the lands ſo warranted by him, and now loſt by his default; which is agreeable to the doctrine of warranty mentioned in the preceding chapter. This is called the *recompenſe*, or *recovery in value*. But Jacob Morland having no lands of his own, being uſually the crier of the court, who, from being frequently thus vouched, is called the *common vouchee*, it is plain that Edwards has only a nominal recompenſe for the lands ſo recovered againſt him by Golding; which lands are now abſolutely veſted in the ſaid recoverer by judgment of law, and ſeiſin thereof is delivered by the ſheriff of the county. So that this colluſive recovery operates merely in the nature of a conveyance in fee-ſimple, from Edwards the tenant in tail to Golding the purchaſer.

The recovery here deſcribed, is with a ſingle voucher only; but ſometimes it is with a double, treble, or farther voucher, as the exigency of the caſe may require. And indeed it is now uſual always to have a recovery with double voucher at the leaſt: by firſt conveying an eſtate of freehold to any indifferent perſon, againſt whom the *præcipe* is brought; and then he vouches the tenant in tail, who vouches over the common vouchee. For, if a recovery be had immediately againſt tenant in tail, it bars only ſuch eſtate in the premiſes of which he is then actually ſeiſed; whereas if the recovery be had againſt another perſon, and the tenant in tail be vouched, it bears every latent right and intereſt which he may have in the lands recovered. If Edwards therefore be tenant of the freehold in poſſeſſion, and John Barker be tenant in tail in remainder, here Edwards doth firſt vouch Barker, and then Barker vouches Jacob Morland the common vouchee; who is always the laſt perſon vouched, and always makes default; whereby the demandant Golding recovers the land againſt the tenant Edwards

Recovery. Edwards, and Edwards recovers a recompenſe of equal value againſt Barker the firſt vouchee; who recovers the like againſt Morland the common vouchee, againſt whom ſuch ideal recovery in value is always ultimately awarded.

This ſuppoſed recompenſe in value is the reaſon why the iſſue in tail is held to be barred by a common recovery. For, if the recoveree ſhould obtain a recompenſe in lands from the common vouchee (which there is a poſſibility in contemplation of law, though a very improbable one, of his doing), theſe lands would ſupply the place of thoſe ſo recovered from him by collusion, and would deſcend to the iſſue in tail. The reaſon will alſo hold with equal force as to moſt remaindermen and reverſioners, to whom the poſſibility will remain and revert, as a full recompenſe for the reality which they were otherwiſe entitled to: but it will not always hold; and therefore, as Pigott ſays, the judges have been even *aſtuti*, in inventing other reaſons to maintain the authority of recoveries. And, in particular, it hath been ſaid, that though the eſtate-tail is gone from the recoveree; yet it is not deſtroyed, but only transferred, and ſtill ſubſiſts; and will ever continue to ſubſiſt (by conſtruction of law) in the recoveror, his heirs and aſſigns: and as the eſtate-tail ſo continues to ſubſiſt for ever, the remainders or reverſions expectant on the determination of ſuch eſtate-tail can never take place.

To ſuch aukward ſhifts, ſuch ſubtile refinements, and ſuch ſtrange reaſoning, were our anceſtors obliged to have recourſe, in order to get the better of that ſtubborn ſtatute *de donis*. The deſign for which theſe contrivances were ſet on foot, was certainly laudable; the unrivetting the fetters of eſtates-tail, which were attended with a legion of miſchiefs to the commonwealth: but, while we applaud the end, we cannot but admire the means. Our modern courts of juſtice have indeed adopted a more manly way of treating the ſubject; by conſidering common recoveries in no other light than as the formal mode of conveyance by which tenant in tail is enabled to aliene his lands. But, ſince the ill conſequences of fettered inheritances are now generally ſeen and allowed, and of courſe the utility and expedience of ſetting them at liberty are apparent, it hath often been wiſhed that the proceſs of this conveyance was ſhortened, and rendered leſs ſubject to niceties, by either totally repealing the ſtatute *de donis*; which perhaps, by reviving the old doctrine of conditional fees, might give birth to many litigations: or by veſting in every tenant in tail, of full age, the ſame abſolute fee-ſimple at once, which now he may obtain whenever he pleaſes, by the colluſive fiction of a common recovery; though this might poſſibly bear hard upon thoſe in remainder or reverſion, by abridging the chances they would otherwiſe frequently have, as no recovery can be ſuffered in the intervals between term and term, which ſometimes continue for near five months together: or, laſtly, by empowering the tenant in tail to bar the eſtate-tail by a ſolemn deed, to be made in term-time, and enrolled in ſome court of record; which is liable to neither of the other objections, and is warranted not only by the uſage of our American colonies, but by the precedent of the ſtatute 21 Jac. I. c. 19. which, in the caſe of a bankrupt tenant in tail, empowers his commiſſioners to ſell the eſtate at any time, by deed indented and enrolled. And if, in ſo national a concern, the emoluments of the officers concerned in paſſing recoveries are thought to be worthy attention, thoſe might be provided for in the fees to be paid upon each enrolment. Recovery. Recrement

2. The force and effect of common recoveries may appear, from what has been ſaid, to be an abſolute bar not only of all eſtates tail, but of remainders and reverſions expectant on the determination of ſuch eſtates. So that a tenant in tail may, by this method of aſſurance, convey the lands held in tail to the recoverer, his heirs and aſſigns, abſolutely free and diſcharged of all conditions and limitations in tail, and of all remainders and reverſions. But, by ſtatute 34 & 35 H. VIII. c. 20. no recovery had againſt tenant in tail of the king's gift, whereof the remainder or reverſion is in the king, ſhall bar ſuch eſtate tail, or the remainder or reverſion of the crown. And by the ſtatute 11 H. VII. c. 20. no woman, after her huſband's death, ſhall ſuffer a recovery of lands ſettled on her by her huſband, or ſettled on her huſband and her by any of his anceſtors. And by ſtatute 14 Eliz. c. 8. no tenant for life, of any ſort, can ſuffer a recovery ſo as to bind them in remainder or reverſion. For which reaſon, if there be tenant for life, with remainder in tail, and other remainders over, and the tenant for life is deſirous to ſuffer a valid recovery, either he, or the tenant to the *præcipe* by him made, muſt vouch the remainder-man in tail, otherwiſe the recovery is void: but if he does vouch ſuch remainder-man, and he appears and vouches the common vouchee, it is then good; for if a man be vouched and appears, and ſuffers the recovery to be had, it is as effectual to bar the eſtate-tail as if he himſelf were the recoveree.

In all recoveries, it is neceſſary that the recoveree, or tenant to the *præcipe*, as he is uſually called, be actually ſeiſed of the freehold, elſe the recovery is void. For all actions to recover the ſeiſin of lands muſt be brought againſt the actual tenant of the freehold, elſe the ſuit will loſe its effect; ſince the freehold cannot be recovered of him who has it not. And, though theſe recoveries are in themſelves fabulous and fictitious, yet it is neceſſary that there be *actores fabulæ* properly qualified. But the nicety thought by ſome modern practitioners to be requiſite in conveying the legal freehold, in order to make a good tenant to the *præcipe*, is removed by the proviſions of the ſtatute 14 Geo. II. c. 20. which enacts, with a retroſpect and conformity to the antient rule of law, that, though the legal freehold be veſted in leſſees, yet thoſe who are entitled to the next freehold eſtate in remainder, or reverſion, may make a good tenant to the *præcipe*; and that, though the deed or fine which creates ſuch tenant be ſubſequent to the judgment of recovery, yet if it be in the ſame term, the recovery ſhall be valid in law: and that though the recovery itſelf do not appear to be entered, or be not regularly entered on record, yet the deed to make a tenant to the *præcipe*, and declare the uſes of the recovery, ſhall after a poſſeſſion of 20 years be ſufficient evidence on behalf of a purchaſer for valuable conſideration, that ſuch recovery was duly ſuffered.

Recovery of perſons drowned, or apparently dead. See Re-animation, and the articles there referred to.

RECREANT, Cowardly, *Faint-hearted*; formerly a word very reproachful. See Battle.

RECREMENT, in chemiſtry, ſome ſuperfluous matter ſeparated from ſome other that is uſeful; in which

Rectifica-tion Rectory.

which ſenſe it is the ſame with *urine*, *faces*, and *excrements*.

RECRIMINATION, in law, an accuſation brought by the accuſed againſt the accuſer upon the ſame fact.

RECRUITS, in military affairs, new-raiſed ſoldiers deſigned to ſupply the place of thoſe who have loſt their lives in the ſervice, or who are diſabled by age or wounds.

RECTANGLE, in geometry, the ſame with a right-angled parallelogram. See Geometry.

RECTIFICATION, in chemiſtry, is nothing but the repeating of a diſtillation or ſublimation ſeveral times, in order to render the ſubſtance purer, finer, and freer from aqueous and earthy parts.

Rectification of Spirits. See Distillation.

RECTIFIER, in navigation, an inſtrument conſiſting of two parts, which are two circles, either laid one upon, or let into the other, and ſo faſtened together in their centres, that they repreſent two compaſſes, one fixed, the other moveable; each of them divided into the 32 points of the compaſs, and 360°, and numbered both ways, from the north and the ſouth, ending at the eaſt and weſt, in 90°.

The fixed compaſs repreſents the horizon, in which the north and all the other points of the compaſs are fixed and immoveable.

The moveable compaſs repreſents the mariner's compaſs; in which the north and all other points are liable to variation.

In the centre of the moveable compaſs is faſtened a ſilk thread, long enough to reach the outſide of the fixed compaſs. But if the inſtrument be made of wood, there is an index inſtead of the thread.

Its uſe is to find the variation of the compaſs, to reſt by the courſe at ſea; having the amplitude or azimuth given.

RECTIFYING the Globe. See Geography, p. 656.

RECTILINEAR, in geometry, right-lined; thus figures whoſe perimeter conſiſts of right lines, are ſaid to be rectilinear.

RECTITUDE, in philoſophy, refers either to the act of judging or of willing; and therefore whatever comes under the denomination of rectitude, is either what is true or what is good, theſe being the only objects about which the mind exerciſes its two faculties of judging and willing.

Moral rectitude, or uprightneſs, is the chooſing and purſuing thoſe things which the mind, upon due inquiry and attention, clearly perceives to be good; and avoiding thoſe that are evil. See *Moral Philoſophy*.

RECTOR, a term applied to ſeveral perſons whoſe offices are very different: as, 1. The rector of a pariſh is a clergyman that has the charge and cure of a pariſh, and poſſeſſes all the tithes, &c. 2. The ſame name is alſo given to the chief elective officer in ſeveral foreign univerſities, particularly in that of Paris, and alſo in thoſe of Scotland. It is alſo applied to the head maſter of large ſchools in Scotland, as in the high ſchool of Edinburgh. 3. Rector is alſo uſed in ſeveral convents for the ſuperior officer who governs the houſe: and the Jeſuits give this name to the ſuperiors of ſuch of their houſes as are either ſeminaries or colleges.

RECTORY, a pariſh church, parſonage, or ſpiritual living, with all its rights, tithes, and glebes.

RECTORY is alſo ſometimes uſed for the rector's manſion or parſonage-houſe. Rectory || Recurvirostra.

RECTUM, in anatomy, the third and laſt of the large inteſtines or guts. See Anatomy, n° 93.

RECTUS, in anatomy a name common to ſeveral pairs of muſcles, ſo called on account of the ſtraightneſs of their fibres.

RECUPERATORES, among the Romans, were commiſſioners appointed to take cognizance of private matters in diſpute, between the ſubjects of the ſtate and foreigners, and to take care that the former had juſtice done them. It came at laſt to be uſed for commiſſioners, to whom the prætor referred the determination of any affair between one ſubject and another.

RECURRENTS, in anatomy, a name given to ſeveral large branches of nerves ſent out by the par vagum from the upper part of the thorax to the larynx.

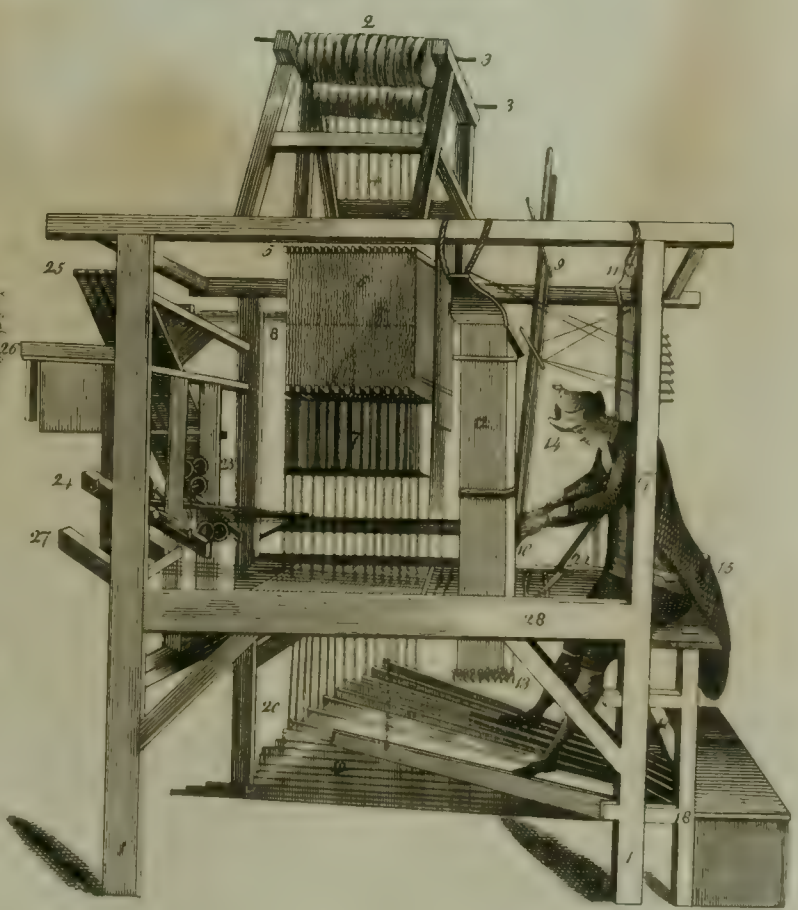
RECURVIROSTRA, in ornithology; a genus belonging to the order of grallæ of Linnæus, and that of palmipedes of Pennant and Latham. The bill is long, ſubulated, bent back, ſharp and flexible at the point. The feet are webbed, and furniſhed with three toes forwards, and a ſhort one behind. Mr Latham notes of this genus three ſpecies, viz. the Avoſetta, or the one commonly known, the Americana, and the Alba. This laſt, it is probable has ſome affinity to the Americana. The recurviroſtra avoſetta is about the ſize of a lapwing in body, but has very long legs. The ſubſtance of the bill is ſoft, and almoſt membranous at its tip; it is thin, weak, ſlender, compreſſed horizontally, and incapable of defence or effort. Theſe birds are variegated with black and white, and during the winter are frequent on the eaſtern ſhores of Great Britain. They viſit alſo the Severn, and ſometimes the pools of Shropſhire. They feed on worms and inſects, which they ſcoop out of the ſand with their bills. They lay two eggs, white, with a greeniſh hue, and large ſpots of black; theſe eggs are about the ſize of a pigeon's.—They are found alſo in various parts of the continent of Europe, in Ruſſia, Denmark, and Sweden, but they are not numerous. They are alſo found in Siberia, but oftener about the ſalt lakes of the Tartarian deſert, and about the Caſpian ſea. They are found likewiſe on the coaſts of Picardy in France in April and November, and at Orleans, but rarely. In breeding-time they are very plentiful on the coaſts of Bas Poictou. They do not appear to wander farther ſouth in Europe than Italy. Whether from timidity or addreſs, the avoſet ſhuns ſnares, and is not eaſily taken. The American avoſet is rather larger and longer than the laſt. The bill is ſimilar, and its colour black: the forehead is duſky white: the head, neck, and upper part of the breaſt, are of a deep cream-colour: the lower parts of the neck behind white: the back is black, and the under parts from the breaſt pure white: the wings are partly black, partly white, and partly aſh-coloured. Theſe birds inhabit North America, and were found by Dampier in Shark's Bay, on the coaſt of New Holland. See Plate CCCCXXXV.

The recurviroſtra, or ſcolopax alba, is about 14 inches and a quarter long, its colour white, the inferior coverts of its wings duſkiſh, its bill orange, its legs brown. Edwards remarks, that the bill of this bird is bent upwards, as in the avoſet; its bill black at the tip, and orange the reſt of its length; all the plumage is white, except

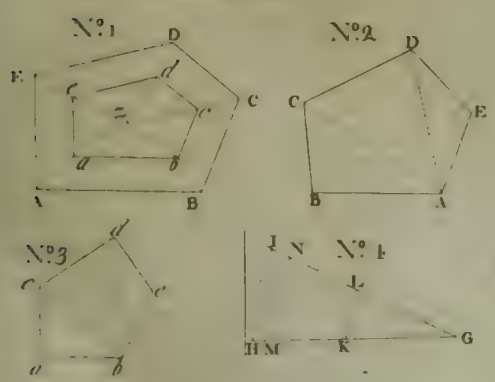
Recurvirostra Americana.

Raphidia.

Ribbon Loom.



Reduction.



Recusants, Red Sea.

except a tint of yellowish on the great quills of the wing and of the tail. Edwards supposes, that the whiteness is produced by the cold climate of Hudson's Bay, from which he received it, and that they resume their brown feathers during the summer. It appears that several species of this bird have spread further into America, and have even reached the southern provinces: for Sloane found our third species in Jamaica; and Fernandez seems to indicate two of them in New Spain, by the names *chiquatzoli* and *elo'otetl*; the former being like the woodcock, and the latter lodging under the stalks of maize.

A bird of this kind, Mr Latham says, was sent from Hudson's Bay, and from the figure, has every appearance of an avoset: however, in Edwards's plate, the toes appear cloven to the bottom; a circumstance seeming to overturn the supposition, and only to be authenticated when other specimens shall have come under the eye of the well-informed naturalist.

RECUSANTS, in England such persons as acknowledge the pope to be the supreme head of the church, and refuse to acknowledge the king's supremacy; who are hence called *Popish recusants*. The penal laws against Papists are now abolished in Britain and in Ireland; and in all probability they will quickly be allowed the amplest privileges.

RED, one of the colours called *simple* or *primary*: being one of the shades into which the light naturally divides itself when refracted through a prism. See CHROMATICS.

RED, in dyeing, see that article.—Some reckon six kinds or casts of red, viz. scarlet-red, crimson-red, madder-red, half-grain red, lively orange-red, and scarlet of cochineal: but it is easy to see that there can be but one proper species of red; namely, the reflection of the light exactly in such a manner as it is refracted by the prism; all other shades being adulterations of that pure colour, with yellow, brown, &c.

RED, in heraldry. See GULES.

RED-Bird. See MUSCICAPA, n° 7.

RED-Breast, in ornithology. See MOTACILLA.

RED-Book of the British exchequer, an ancient record or manuscript volume, in the keeping of the king's remembrancer, containing divers miscellany treatises relating to the times before the conquest.

Red-Lead. See CHEMISTRY, n° 1213.

Red Precipitate of Mercury. See CHEMISTRY, n° 764.

Red-Russia, or *Little Russia*, a province of Poland, bounded on the west by Upper Poland, on the north by Lithuania, on the east by the country of the Little Tartars, and on the south by Moldavia, Transylvania, and a part of Hungary. It comprehends Russia properly so called, Volhinia, and Podolia. It is about 650 miles in length, and from 150 to 250 in breadth. It consists chiefly of large fields, but little cultivated on account of the frequent inroads of the Tartars, and because there is no water-carriage. It had the name of *Red Russia*, from the colour of the hair of its inhabitants. Russia, properly so called, comprehends the three palatinates of Leopol or Lemburg, Belsko, and Chelm.

Red-Sea or *Arabic Gulph*, so much celebrated in sacred history, separates Arabia from Upper Ethiopia and part of Egypt. This sea is 350 leagues in length and 40 in breadth. As no river falls into it of sufficient force to counteract the influence of the tide, it is more affected by the motions of the great ocean than any of the inland seas nearly in the same latitude. It is not much exposed to tempests: the winds usually blow from north to south, and being periodical, like the monsoons of India, invariably determine the season of sailing into or out of this sea. It is divided into two gulphs; that to the east was called the *Ælanitic gulph*, from the city Ælana at the north end of it; and that to the west the *Heroopolitic*, from the city of Heroopolis; the former of which belongs to Arabia, and the latter to Egypt.

Mr Bruce has made many observations on this sea, which are worthy of notice.—With regard to the name, he says it was certainly derived from Edom or Esau the son of Jacob; though in another place he says, he wonders that writers have not rather supposed it to have got the epithet of *Red*, from the colour of the sand on its coasts, than for other reasons they have alleged. With regard to any redness in the water itself, or in the bottom, which some have asserted, our traveller assures us that there is no such thing. It is more difficult to assign a reason for the Hebrew name of it, which signifies the *Sea of Weeds*; as he never saw a weed throughout the whole extent of it. "Indeed, (says he) upon the slightest consideration, it will occur to any one, that a narrow gulph, under the immediate influence of the monsoons, blowing from contrary points six months each year, would have too much agitation to produce such vegetables, seldom found but in stagnant waters, and seldom, if ever, found in salt ones. My opinion then is, that it is from the large trees or plants of white coral, spread everywhere over the bottom of the Red Sea, perfectly in imitation of plants on land, that the sea has obtained this name.—I saw one of these, which, from a root nearly central, threw out ramifications of an almost circular form, measuring 26 feet every way."

Our author has also made many useful observations on the navigation of this sea. "All the western shore (he says) is bold, and has more depth of water than the east; but on this side there is neither anchoring ground nor shoals. It is rocky, with a considerable depth of water everywhere; and there are a number of sunken rocks, which, though not visible, are sufficiently near the surface to destroy a large ship." The cause of this, in Mr Bruce's opinion, is, that the mountains on the side of Abyssinia and Egypt are all of hard stone, porphyry, many different kinds of marble, granite, alabaster, and basaltes. These being all composed of solid materials, therefore, can part with very little dust or sand, which might otherwise be blown from them into the sea. On the opposite coast, viz. that of Hejaz and Tahamah, on the Arabian side, the whole consists of moving sands; a large quantity of which is blown from the south-east by the dry winter monsoons; which being lodged among the rocks on that side, and confined there by the north-east or summer monsoon, which is in a contrary direction, hinders them from coming over to the Egyptian side. Hence the western coast is full of sunk rocks for want of sand to cover them, with which they would otherwise become islands. They are naked and bare all round, with sharp points like spears; while, on the east-side, every rock becomes

[illegible] Island, but except two or three [illegible] become an Indian. On the east of the principal of these harbours, the people have piled up great heaps of stones to [illegible] and in this place Mr Bruce observed that the [illegible] Cairo to Judda, expected to [illegible] from the effects of [illegible] which was not [illegible] water, I suppose [illegible] their wants, after navigating their pottos of the [illegible] in the daytime, [illegible] and quietly to at four o'clock in the afternoon; and in these little harbours [illegible] the night, to sail into the channel again next [illegible]

"The western channel of the Red Sea was chosen, in the days of the Ptolemies, for the track of the Indian and Arabian. There they erected a great number of towns all along the western coast; and notwithstanding the dangers of the navigation, we do not hear that it was ever abandoned on account of them.

From the observations made by our author on the navigation of the Red Sea, he undertakes to point out a safe passage for large ships to the gulph of Suez, so that they may be able to judge of the propriety of their own course themselves, without trusting implicity to the pilots they meet with, who are often very ignorant of their profession. This sea, according to Mr Bruce, may be divided into four parts, of which the channel occupies two, till near the latitude of 20°, or that of Cosseir. On the west it is deep water, with many rocks; and on the east it is full of islands, as has been already mentioned. Between these islands there are channels and harbours of deep water, where ships may be protected in any wind; but a pilot is necessary in sailing among these from Mocha to Suez, and the voyage besides can be continued only during part of the day. Ships bound to Suez without the consent of the sheriffe of Mecca, that is, without any intention of selling their cargo at Jidda, or paying custom there, ought to take in their fresh water at Mocha; or if there be any reason against this, a few hours will carry them to Azab or Saba on the Abyssinian coast, where they may be plentifully supplied: but it must be remembered, "that the people here are *Galla*, the most treacherous and villanous wretches on earth." Here not only water may be procured, but plenty of sheep, goats, with some myrrh, and incense in the proper season.—Great caution, however, must be used in dealing with these people, as even those of Mocha, who are absolutely necessary to them in their commercial dealings, cannot trust them without surety or hostages. Not many years ago, the surgeon and mate of the Elgin East Indiaman, with several other sailors, were murdered by these savages as they went ashore to purchase myrrh, though they had a letter of safe conduct from the sheikh.

To such as do not want to be known, our author recommends a low black island on the coast of Arabia, named [illegible], in latitude 15° 20'. It is distinguished by a white [illegible] on the west end of it; where water is to be had in still greater plenty than at Azab; but as provisions, except only as are very bad, can be procured. If it is necessary not to be seen at all on the coast, the island of Farsha is recommended by our author as having excellent water, with a saint or monk, whose office is to keep the wells clean. This is one of the chain of islands which stretches almost across the gulph from Loheia to Mahuah, and from actual observation by Mr Bruce, is found to be situated in N. Lat. 15° 59' 43". E. Long. 42° 47'. From this to Yambo there is a safe watering place; and there is an absolute necessity for having a pilot before you come to Ras Mahomet; because, over the Ælanitic gulph, the mountains of Auchi, and the Cape itself, there is often a thick haze which lasts for many days together, and a number of ships are lost by mistaking the eastern bay or Ælanitic gulph for the entrance of the gulph of Suez; the former has a ridge of rocks nearly across it. After reaching Shedwan, a large island, about three leagues farther in a north by west direction, there is a bare rock distinguished by no particular name; but so situated that ships ought not to come within three leagues of it. This rock is to be left to the westward at the distance just mentioned; after passing which you meet with shoals forming a pretty broad channel, with soundings from 15 to 32 fathoms; and again, on standing directly for Tor, there are two other oval sands with sunk rocks in the channel, between which you are to steer. Tor may be known at a distance by two hills that stand near the water side; which, in clear weather, may be seen six leagues off. Just to the south-east of these is the town and harbour, where there are some palm-trees about the houses, the more remarkable, as being the first that are seen on the coast. The soundings in the way to Tor harbour are clean and regular; "and, by giving the beacon a small birth on the larboard hand, you may haul in a little to the northward, and anchor in five or six fathom." In spring-tides, it is high water at Tor nearly about 12 o'clock: in the middle of the gulph there is no perceptible tide, but at the sides it runs at the rate of more than two knots in the hour. Tor itself is but a small village, with a convent of monks belonging to those of Mount Sinai. It was taken by Don John de Castro, and fortified soon after its discovery by the Portuguese; but has never since been a place of any consideration; serving now only for a watering place to the ships trading to or from Suez.—From this place there is a distinct view of mounts Horeb and Sinai, which appear above and behind the others, with their tops frequently covered with snow in the winter. Red Sea.

Mr Bruce next proceeds to consider some questions which may be reckoned matters of curiosity rather than any thing else. One of these is concerning the level of the water of this sea itself, which has been supposed several feet above that of the Mediterranean. "To this (says our author) I answer, that the fact has been supposed to be so by antiquity, and alleged as a reason why Ptolemy's canal was made from the bottom of the Heroopolitic gulph rather than brought due north across the isthmus of Suez; in which last case it was feared it would submerge a great part of Asia Minor. But who has ever attempted to verify this by experiment? or who is capable of settling the difference of levels, amounting, as supposed, to some feet and inches, between two points 120 miles distant from each other, over a desert that has no settled surface, but is changing its height every day? Besides, since all seas are in fact but one, what is it that hinders the Indian ocean to flow to its level? What is it that keeps the Indian ocean up? Till this last branch of the question is resolved, I shall take it for granted that no such difference

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of level exists, whatever Ptolemy's engineers might have pretended to him; because, to suppose it fact, is to suppose the violation of one very material law of nature."

The next thing considered by our author is the passage of the Israelites through the Red Sea. At the place where he supposes the passage to have been, the sea is not quite four leagues broad, so that it might easily have been crossed in one night without any miracle.

There is about 14 fathom water in the channel, and 9 at the sides, with good anchorage everywhere; the farthest side is a low sandy coast, and a very easy landing place. "The draught of the bottom of the gulph (says he) given by Dr Pococke, is very erroneous in every part of it. It was proposed to Mr Niebuhr, when in Egypt, to inquire upon the spot, whether there were not some ridges of rocks where the water was shallow, so that an army at particular times might pass over? Secondly, whether the Etesian winds, which blow strongly all summer from the north-west, could not blow so violently against the sea, as to keep it back on a heap, so that the Israelites might have passed without a miracle? And a copy of these queries was left for me to join my inquiries likewise. But I must confess, however learned the gentlemen were who proposed these doubts, I did not think they merited any attention to solve them. If the Etesian winds, blowing from the north-west in summer, could heap up the sea as a wall on the right or to the south, of 50 feet high, still the difficulty would remain of building the wall on the left hand or to the north. Besides, water standing in that position for a day, must have lost the nature of a fluid. Whence came that cohesion of particles that hindered that wall to escape at the sides? This is as great a miracle as that of Moses. If the Etesian winds had done this once, they must have repeated it many a time before and since, from the same causes. Yet Diodorus Siculus says, the Troglodytes, the indigenous inhabitants of that very spot, had a tradition from father to son, from their very earliest and remotest ages, that once this division of the sea did happen there; and that, after leaving the bottom some time dry, the sea again came back and covered it with great fury. The words of this author are of the most remarkable kind. We cannot think this heathen is writing in favour of revelation. He knew not Moses, nor says a word about Pharoah and his host; but records the miracle of the division of the sea in words nearly as strong as those of Moses, from the mouths of unbiassed undesigning pagans."

Red-Shank, in ornithology. See Scolopax.

Red-Start, a species of Motacilla.

Red-Wing. Se Turdus.

REDANS, in field fortification. See the article Redens.

REDENDUM, in law, is used substantively for the clause in a lease wherein the rent is reserved to the lessor. The proper place for it is next after the limitation of estate.

REDDITIO, was the third part of the sacrifice of the heathens, and consisted of the solemn act of putting in again the entrails of the victims, after they had been religiously inspected. See Sacrifice.

REDDLE, a soft, heavy, red marle, of great use in colouring; and being washed and freed from sand is often sold by the druggists under the name of *bole armenic*.

REDEMPTION, in law, a faculty or right of re-entering upon lands, &c. that have been sold and assigned, upon reimbursing the purchase-money with legal costs.

Redemption, in theology, denotes the recovery of mankind from sin and death, by the obedience and sacrifice of Christ, who on this account is called the *Redeemer of the world*. See Theology.

REDENS, Redans, or *Redant*, in fortification, a kind of work indented in form of the teeth of a saw, with salient and re-entering angles; to the end that one part may flank or defend another. It is likewise called *saw-work* and *indented work*. The lines or faces in this flank one another.

Redens are used in fortifying walls, where it is not necessary to be at the expence of building bastions; as when they stand on the side of a river running through a garrison town, a marsh, the sea, &c. But the fault of such fortification is, that the besiegers from one battery may ruin both the sides of the tenaille or front of a place, and make an assault without fear of being enfiladed, since the defences are mined. The parapet of the corridor is likewise often redented or carried on by the way of redens. The redens was used before bastions were invented, and some people think them preferable.

REDI (Francis), an Italian physician and polite scholar, was born at Arezzo in Tuscany in 1626. His ingenuity and learning recommended him to the office of first physician to Ferdinand II. duke of Tuscany; and he contributed not a little toward the compiling of the Dictionary of La Crusca. He wrote upon vipers, upon the generation of insects, and composed a good deal of poetry. All his writings, are in Italian; and his language is so fine and pure, that the authors of the Dictionary of La Crusca have often cited them as standards of perfection. He died in 1697.

REDOUBT, in fortification, a small square fort, without any defence but in front; used in trenches, lines of circumvallation, contravallation, and approach; as also for the lodgings of corps-de-guard, and to defend passages.

REDUCTION, in the schools, a manner of bringing a term or proposition, which was before opposite to some other, to be equivalent to it.

Reduction, in arithmetic, that rule whereby numbers of different denominations are brought into one denomination. See Arithmetic.

Reduction of Equations, in algebra, is the clearing them from all superfluous quantities, bringing them to their lowest terms, and separating the known from the unknown, till at length only the unknown quantity is found on one side, and known ones on the other. The reduction of an equation is the last part of the resolution of the problem. See Algebra.

Reduction of a figure, design, or draught, is the making a copy thereof, either larger or smaller than the original; still preserving the form and proportion. The great use of the proportional compasses is the reduction of figures, &c. whence they are called *compasses of reduction*. See the article Compass.

There are various methods of reducing figures, &c.

[illegible] by means of the perspective, or parallelogram; but this hath its defects. See the article Perspective.

Plate [illegible]. The [illegible] methods of reduction are as follows. 1. To reduce a figure, as ABCDE (n° 1.), into a [illegible]. [illegible] the middle of the figure, [illegible], and from this point draw lines to the several angles A, B, C, &c. then drawing the line [illegible] parallel to AB, [illegible] parallel to BC, &c. you will have the figure [illegible] similar to ABCDE.

If the figure [illegible] had been required to be enlarged, there needed nothing but to produce the lines from the [illegible] the angles, as [illegible] D, [illegible] C, &c. and to draw lines, viz. DC, CB, &c. parallel to the sides *d c*, *c b*, &c.

2. To reduce a figure by the angle of proportion, suppose the figure ABCDE (n° 2.) required to be diminished in the proportion of the line AB to *a b* (n° 3.), draw the indefinite line GH (n° 4.), and from G to H set off the line AB. On G describe the arch HI. Set off the line *a b* as a chord on HI, and draw GI. Then with the angle IGH, you have all the measures of the figure to be drawn. Thus to lay down the point *c*, take the interval BC, and upon the point G describe the arch KL. Also on the point G describe MN; and upon A, with the distance MN, describe an arch cutting the preceding one in *c*, which will determine the side *b c*. And after the same manner are the other sides and angles to be described. The same process will also serve to enlarge the figure.

3. To reduce a figure by a scale. Measure all the sides of the figure, as ABCDE (n° 2.) by a scale, and lay down the same measures respectively from a smaller scale in the proportion required.

4. To reduce a map, design, or figure, by squares. Divide the original into little squares, and divide a fresh paper of the dimensions required into the same number of squares, which are to be larger or less than the former, as the map is to be enlarged or diminished. This done in every square of the second figure, draw what you find in its correspondent one in the first.

Reduction, in metallurgy, is the bringing back metalline substances which have been changed into scoriæ or ashes, or otherwise divested of their metallic form, into their natural and original state of metals again. See Metallurgy, *passim*; and Chemistry, n° 140. and 320.

Reduction, in surgery, denotes an operation whereby a dislocated, luxated, or fractured bone, is restored [illegible] place.

REDUNDANCY, a fault in discourse, consisting in the use of a superfluity of words. Words perfectly synonymous are redundant, and ought to be retrenched.

REDUNDANT, in music. What the French call *une accord superflu*, which we have translated *a redundant chord* in the article Music (from D'Alembert), has by others been rendered *a chord extremely sharp*, as in the translation of Rameau's Principles of Composition. Their nature will be best understood by a few examples, and an account of the number of tones, semitones, or lesser intervals, contained in each.

The *second redundant* is composed of a major tone, and a minor semitone; as from *fa* to *sol* sharp. Its proportion is as 64 to 75.

The *third redundant* consists of two tones and a semitone, as *fa*, *la*, sharp. Its proportion is as 96 to 125.

The *fourth redundant* is the same with the tritone.

From these examples compared with the same intervals in their natural state, the reader may form a general idea of what is meant by *redundant*.

REE, Reis, or *Rs*, a little Portuguese coin. See *Money-Table*.

REED, in botany. See Arundo and Bamboo.

There are two sorts of reeds, says Haselquist, growing near the Nile. One of them has scarce any branches; but is furnished with numerous leaves, which are narrow, smooth, channelled on the upper surface; and the plant is about 11 feet high. The Egyptians make ropes of the leaves. They lay them in water like hemp, and then make them into good strong cables. These, with the bark of the date-tree, form almost the only cable used in the Nile. The other sort is of great consequence. It is a small reed, about two or three feet high, full branched, with short, sharp, lancet-shaped leaves. The roots, which are as thick as the stem, creep and mat themselves together to a considerable distance. This plant seems useless in common life: but to it, continues the learned author, is the very soil of Egypt owing: for the matted roots have stopped the earth which floated in the waters, and thus formed, out of the sea, a country that is habitable.

Fire-Reeds. See *Fire-Ship*.

Reed, a term in the west of England for the straw used by thatchers, which is wheat straw finely combed, consisting of stiff, unbruised, and unbroken stalks of great length, carefully separated from the straw used for fodder by the thresher, and bound in sheaves or nitches, each of which weighs 28 lb. and are sold from 21 s. to 31 s. per hundred nitches, according to the season. This is a great improvement in the art of thatching, as it gives a finish to the work which cannot be attained by straw, rough and tumbled together, without any separation of the long and short: it also is a readier mode of working.

REEF, a term in navigation. When there is a great gale of wind, they commonly roll up part of the sail below, that by this means it may become the narrower, and not draw so much wind; which contracting or taking up the sail they call a *reef*, or *reefing the sail*: so also when a *top-mast is sprung*, as they call it, that is, when it is cracked, or almost broken in the cap, they cut off the lower piece that was near broken off, and setting the other part, now much shorter, in the step again, they call it a *reefed top-mast*.

REEL, in the manufactories, a machine serving for the office of reeling. There are various kinds of reels; some very simple, others very complex.

REELING, in the manufactories, the winding of silk, cotton, or the like, into a skain, or upon a button, to prevent its entangling. It is also used for the charging or discharging of bobbins, or quills, to use them in the manufacture of different stuffs, as thread, silk, cotton, &c. Reeling is performed in different ways, and on different engines.

REEVING, in the sea-language, the putting a rope through a block: hence to pull a rope out of a block is called *unreeving*.

RE-EXCHANGE, in commerce, a second payment of the price of exchange, or rather the price of a new

Ree | Re-Exchange.

Refection ‖ Refining.

a new exchange due upon a bill of exchange that comes to be proteſted, and to be refunded the bearer by the drawer or indorſer.

REFECTION, among eccleſiaſtics, a ſpare meal or repaſt, juſt ſufficing for the ſupport of life: hence the hall in convents, and other communities, where the monks, nuns, &c. take their refections or meals in common, is called the *refectory*.

REFERENCE, in writing, &c. a mark relative to another ſimilar one in the margin, or at the bottom of the page, where ſomething omitted in the text is added, and which is to be inſerted either in reading or copying.

REFINING, in general, is the art of purifying a thing; including not only the eſſaying or refining of metals, but likewiſe the depuration or clarification of liquors. See METALLURGY, Part II. CLARIFICATION; and PHARMACY.

Gold and ſilver may be refined by ſeveral methods, which are all founded on the eſſential properties of theſe metals, and acquire different names according to their kinds. Thus, for inſtance, gold having the property which no other metal, not even ſilver, has of reſiſting the action of ſulphur, of antimony, of nitrous acid, of marine acid, may be purified by theſe agents from all other metallic ſubſtances, and conſequently may be refined. Theſe operations are diſtinguiſhed by proper names, as *purification of gold by antimony*, *parting*, *concentrated parting*, *dry parting* *. In a ſimilar manner, as ſilver has the property, which the imperfect metals have not, of reſiſting the action of nitre, it may be refined by this ſalt: but the term *refining* is chiefly applied to the purification of gold and ſilver by lead in the cupel.

* See Parting.

This is performed by the deſtruction, vitrification, and ſcorification, of all the extraneous and deſtructible metallic ſubſtances with which they are allayed.

As none but the perfect metals can reſiſt the combined action of air and fire, without loſing their inflammable principle, and being changed into earthy or vitreous matters, incapable of remaining any longer united with ſubſtances in a metallic ſtate, there is then a poſſibility of purifying gold and ſilver from all allay of imperfect metals merely by the action of fire and air; only by keeping them fuſed till all the allay be deſtroyed: but this purification would be very expenſive, from the great conſumption of fuel, and would be exceedingly tedious. Silver allayed with copper has been expoſed longer than 60 hours to a glaſs-houſe fire without being perfectly refined: the reaſon of which is, that when a ſmall quantity only of imperfect metal remains united with gold or ſilver, it is covered and protected from the action of the air, which is neceſſary for the combuſtion of the imperfect metals, as of all combuſtible matters.

This refining of gold and ſilver merely by the action of fire, which was the only method anciently known, was very long, difficult, expenſive, and imperfect; but a much ſhorter and more advantageous method has been diſcovered. This method conſiſts in adding to the allayed gold and ſilver a certain quantity of lead, and in expoſing afterwards this mixture to the action of the fire. Lead is one of the metals which loſes moſt quickly and eaſily a ſufficient quantity of its inflammable principle to ceaſe to be in a metallic ſtate; but, at the ſame time, this metal has the remarkable property of retaining, notwithſtanding the action of the fire, enough of this ſame inflammable principle to be very eaſily melted into a vitrified and powerfully vitrifying matter, called *litharge*. Refining.

The lead then which is to be added to the gold and ſilver to be refined, or which happens naturally to be mixed with theſe metals, produces in their refining the following advantages: 1. By increaſing the proportion of imperfect metals, it prevents them from being ſo well covered and protected by the perfect metals.—2. By uniting with theſe imperfect metals, it communicates to them a property it has of loſing very eaſily a great part of its inflammable principle. 3. By its vitrifying and fuſing property which it exerciſes with all its force upon the calcined and naturally refractory parts of the other metals, it facilitates and accelerates the fuſion, the ſcorification, and the ſeparation of theſe metals. Theſe are the advantages procured by lead in the refining of gold and ſilver.

The lead, which in this operation is ſcorified, and ſcorifies along with it the imperfect metals, ſeparates from the metallic maſs, with which it is then incapable of remaining united. It floats upon the ſurface of the melted maſs; becauſe, by loſing part of its phlogiſton, it loſes alſo part of its ſpecific gravity, and laſtly it vitrifies.

Theſe vitrified and melted matters accumulating more and more upon the ſurface of the metal while the operation advances, would protect this ſurface from the contact of air which is ſo abſolutely neceſſary for the ſcorification of the reſt, and would thus ſtop the progreſs of the operation, which could never be finiſhed, if a method had not been contrived for their removal. This removal of the vitrified matter is procured either by the nature of the veſſel in which the melted matter is contained, and which being porous, abſorbs and imbibes the ſcorified matter as faſt as it is formed, or by a channel cut in the edge of the veſſel through which the matter flows out.

The veſſel in which the refining is performed is flat and ſhallow, that the matter which it contains may preſent to the air the greateſt ſurface poſſible. This form reſembles that of a cup, and hence it has been called *cupel*. The furnace ought to be vaulted, that the heat may be applied upon the ſurface of the metal during the whole time of the operation. Upon this ſurface a cruſt of dark-coloured pellicle is continually forming. In the inſtant when all the imperfect metal is deſtroyed, and conſequently the ſcorification ceaſes, the ſurface of the perfect metals is ſeen, and appears clean and brilliant. This forms a kind of fulguration or coruſcation. By this mark the metal is known to be refined. If the operation be ſo conducted that the metal ſuſtains only the preciſe degree of heat neceſſary to keep it fuſed before it be perfectly refined, we may obſerve that it fixes or becomes ſolid all at once in the very inſtant of the coruſcation; becauſe a greater heat is required to keep ſilver or gold in fuſion when they are pure than when allayed with lead.

The operation of refining may be performed in ſmall or in large quantities, upon the ſame principles, but only with ſome differences in the management. As the refining of ſmall quantities of perfect metals is performed in the ſame manner as theſe metals are eſſayed, the

eſſay

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...ellay being only a very accurate refining, we refer to the article *Parts of the Human Body*.

Large quantities of silver are thus purified, after the operations by which that metal is obtained from its ores. This silver, being always much alloyed, is to be mixed with a sufficient quantity of lead to carry it to its purification, unless lead has been added to it in the first fusion from the ore, or unless it has been extracted from an ore which itself contains lead; in which latter case, it is alloyed naturally with a sufficient quantity, or more than sufficient, for the refining of it.

REFLECTION, the act or progressive motion of a moving body, whereby it is turned back from the surface of that body which it would otherwise have penetrated.

Circle of Reflection is an instrument for measuring angles to a very great degree of accuracy. It was invented by the celebrated astronomer Mr Tobias Mayer of Gottingen, principally with a view to do away the errors of the divisions of the limb; and has since been much improved by the Chevalier de Borda, and M. J. H. de Magellan. This instrument is particularly applicable to the measuring of the distances of the heavenly bodies, and was used by the French in their part of the operation for determining the difference of meridians of Paris and Greenwich. For the description, rectification, and use of this instrument, see the article NAVIGATION, and *Mackay on the Longitude*, vol. i. p. 44.

Rays of the Rays of Light, in catoptrics, is their return, after approaching so near the surface of bodies as to be thereby repelled or driven backwards. For the causes of reflection, see OPTICS, *Index* at *Rays of Light* and *Reflection of Light*, &c. For the application of the doctrine of reflection to mirrors, see OPTICS, p. 347—349. See also MIRROR, *Burning-Glass*, and *Glass-Grinding*; and for the *coating* or *foliating* of mirrors, see the article *FOLIATING of Looking-glasses*, &c. See also TELESCOPE.

REFLECTION is also used, figuratively, for an operation of the mind, whereby it turns its view backwards as it were upon itself, and makes itself and its own operations the object of its disquisition; and by contemplating the manner, order, and laws, which it observes in perceiving ideas, comparing them together, reasoning, &c. it frames new ideas of the relations discovered therein. See METAPHYSICS.

REFLEX, in painting, means those places in a picture which are supposed to be illuminated by light reflected from some other body in the same piece. See PAINTING, Part I. sect. 2. and 5.

REFLUX, the backward course of water, has the same meaning as the ebbing of the sea, and is opposed to flood, flux, or the flowing of the sea. See TIDES.

REFORM means a change from worse to better, a re-establishment or revival of former neglected discipline, or a correction of abuses therein. The term is much used in a monastic sense for the reducing an order or congregation of religious to the ancient severity of the rule from which it had gradually swerved, or even for improving on the ancient rule and institution itself, and voluntarily making it more severe. In this sense the order of St Bernard is said to be only a reform of that of St Benedict. In this country it is applied both to politics and religion, and may innocently be applied to any endeavours to change an establishment from worse to better. But it appears at present to have been chiefly made a pretence for designs which could not fairly or safely be avowed. Reform.

A reform in religion and in parliament (see PARLIAMENT) has, in England been alleged to be most loudly called for by men whose religious notions are immensely different from what has been generally reckoned Christianity, and whose designs, as has been suggested, went to the overthrow of all civil order. For invidious purposes these, the word reform is a good cloak, especially if any thing can be fixed upon, either in the religion or government of the state, which, with the help of exaggeration and distortion, can be represented to the weak and unthinking as extremely defective and erroneous.

The general error of these men is said to be, that having picked up a set of speculative notions which flatter their own pride and the pride of those who listen to them, they will allow nothing to the arguments of their opponents or the experience of mankind. They think too often and too much upon their ideal reforms, that while they imagine their notions are liberal and extensive, they become contracted beyond imagination; while their judgments, of course, are warped with the most inveterate prejudices (see PREJUDICE.) They see, or think they see, the propriety of their schemes; but it is said they seldom, perhaps never reflect, that that may be true in speculation or in theory which cannot possibly be reduced to practice. They will not take the world as it is, and allow it to profit by the wisdom and experience of ages; but they will reform it according to those ideas of right which they have learned from their own speculations and airy theories; seldom considering what may be done, they are determined to do what they think ought to be done. Liberty of conscience, and liberty of action, have been claimed by them as the unalienable rights of man; and so we ourselves are disposed to think them: and it has been urged that in this country they have not been denied to any man, or set of men, so far as has been thought consistent with the safety of the state, and that of the other individuals who compose it. At the same time, the very same men hesitate not to blame, with acrimony the most violent, and to the utmost of their power to restrain, the actions and opinions of those who with equal conviction, often on different grounds, and generally with much modesty, differ from them.

Amidst that excessive ardour, too, with which they propagate their opinions, they forget the extreme danger of withdrawing the attention of that part of the community, who must earn their bread by the sweat of their brow, from their proper occupations, to the tempestuous sea of political debate, for which their education and mode of life cannot possibly have qualified them. It requires but very little penetration, however, to be able to see, that it can be of no real service either to the individuals themselves, or to the community at large, in whatever light we look upon it. Indeed, to make those the judges of the law, and the reformers of the legislature, who have all their lives been employed in manual labour, is the extreme of folly; and yet it is what some men of considerable abilities, have judged highly proper and have more than once attempted. The effect of such a mode of seduction (if it deserves that name), when it shall become general, instead of serving the purposes of a real reform, must be to annihilate all civil order. Dissatisfaction

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tisfaction is the moſt powerful check to honeſt induſtry; and diſſatisfaction and idleneſs muſt be the effect of the wanderings of ſuch men in the labyrinths of politics; which, for uncultivated minds eſpecially, paves the way for every ſpecies of vice, and gradually ripens them for any wickedneſs, however atrocious. For the truth of theſe remarks, appeals are made to the hiſtory of mankind from the Creation to the preſent time: however, the *ſolar friends of reform*, and many ſuch, we doubt not, there are, will undoubtedly reflect, that in the preſent day we have as much to fear from licentiouſneſs as from deſpotiſm: from reform carried to an extreme as much as from the pretended attempts of magiſtrates to annihilate real liberty (See REVOLUTION).

It may alſo be worth their while to conſider, that times of public danger are not generally the beſt adapted to attempt changes of government; becauſe what might ſatisfy one party would probably be thought too little by another, and diviſions at ſuch a period are moſt dangerous. When, therefore, attempts are made for reform which appear to be inconſiſtent with the ſafety of the ſtate, reſtrictions muſt be uſed, which may by ſpeculative men be thought ſevere and unneceſſary, but of which they themſelves are the cauſes. Theſe reſtrictions too will be patiently ſubmitted to by the wiſer part of the community, when in more peaceable times they would neither have been thought of nor allowed.

Speculative reaſoners may ſpeak as much as they will of enlightening the minds of men, and of reforming government by the dictates of a refined and diſpaſſionate philoſophy; but when they come to apply their notions to practice, they will either find their repreſentations little better than empty ſounds, and therefore ineffectual; or, as is more generally found to be the caſe, thoſe ſchemes which in theory appeared to be perfect, will in practice, when combined with the malignant and ambitious paſſions of men, lead to ruin and diſorder. The firſt inſtitution of government, except among the Jews, was unqueſtionably the effect of paſſion and intereſt combined; and this paſſion and this intereſt, reſtrained within due bounds, is productive of much happineſs. That government, we believe, too, will be beſt ſupported and moſt productive of happineſs, in which the mutual paſſions and intereſts of the individuals who compoſe it are ſo equally poiſed as to ſupport one another, and to promote each the ends and ſucceſs of the other: and this by the ableſt reaſoners and the beſt men has been thought to be the caſe with the Britiſh conſtitution. If the modern favourers of reform ſhould think this an unſtable ſupport, if they will conſider the world as it ever has been, and as it is, they will find it the only one we have, except religion; and they will thence be inclined to make the beſt of it. If, after all, however, they ſhould be diſpoſed to doubt the poſition, we have only further to requeſt them, with the ſincerity of men and of Chriſtians, to conſult their own breaſts, and ſeriouſly to conſider the probable motives of thoſe who act with them. They will then perhaps ſee, and they ſurely ought to acknowledge, that few men have acted more according to the impulſe of paſſion, intereſt, and ambition, than thoſe who have for ſome time paſt ſounded the toczin of reform.

REFORMATION, in general, an act of reforming or correcting an error or abuſe in religion, diſcipline, or the like. By way of eminence the word is uſed for that great alteration and reformation in the corrupted ſyſtem of Chriſtianity, begun by Luther in the year 1517. Reformation.

Under the article HISTORY (ſect. ii.), the various corruptions in religion, the oppreſſions and uſurpations of the clergy, and the extreme inſolence of the popes, have been ſo fully treated of, that any further detail here is unneceſſary. It is ſufficient to obſerve, that, before the period of the Reformation, the Pope had in the moſt audacious manner declared himſelf the ſovereign of the whole world. All the parts of it which were inhabited by thoſe who were not Chriſtians, he accounted to be inhabited by *no-body*; and if Chriſtians took it into their heads to poſſeſs any of thoſe countries, he gave them full liberty to make war upon the inhabitants without any provocation, and to treat them with no more humanity than they would have treated wild beaſts. The countries, if conquered, were to be parcelled out according to the pope's pleaſure; and dreadful was the ſituation of that prince who refuſed to obey the will of the holy pontiff, of which many inſtances will occur to the reader in the various hiſtorical articles of this work. In conſequence of this extraordinary authority which the pope had aſſumed, he at laſt granted to the king of Portugal all the countries to the eaſtward of Cape Non in Africa, and to the king of Spain all the countries to the weſtward of it. In this, according to the opinions of ſome, was completed in his perſon the character of *Antichriſt ſitting in the temple of God, and ſhewing himſelf as God**. He had long before, ſay they, aſſumed the ſupremacy belonging to the Deity himſelf in ſpiritual matters; and now he aſſumed the ſame ſupremacy in wordly matters alſo, giving the extreme regions of the earth to whom he pleaſed. The Reformation, therefore, they conſider as the immediate effect of divine power taking vengeance on this and all other deviations from the ſyſtem of truth; while others conſider it merely as an effect of natural cauſes, and which might have been foreſeen and prevented, without abridging the papal power in any conſiderable degree. 1. The pope aſſumes the diſpoſal of the whole world. * 2 Theſſ. ii. 4.

Be this as it will, however, the abovementioned partition was the laſt piece of inſolence which the pope ever had, or in all probability ever will have, in his power to exerciſe, in the way of parcelling out the globe to his adherents. Every thing was quiet, every heretic exterminated, and the whole Chriſtian world ſupinely acquieſced in the enormous abſurdities which were inculcated upon them; when, in 1517, the empire of ſuperſtition began to decline, and has continued to do ſo ever ſince. The perſon who made the firſt attack on the extravagant ſuperſtitions then prevailing was Martin Luther; the occaſion of which is fully related under the article LUTHER. By ſome it is pretended, that the only motive which Luther had in beginning the Reformation was his enmity to the Dominican friars, who had excluded his order (the Auguſtins) from all ſhare in the gainful traffic of indulgences. But this does not ſeem at all probable, if we conſider that ſuch a motive would not naturally have led him to deny the virtue of indulgences, as ſuch conduct could not but exclude him for ever from any chance of a ſhare in the traffic, which otherwiſe perhaps he might have obtained. Beſides, the extreme contrariety of this traffic to the common principles of reaſon and honeſty was ſo great, that we 2. Reformation begun by Luther.

cannot

Reformation. 5 Form of worship first established in Wittemberg.

Wittemberg, the Reformation advanced rapidly; almost every city of Saxony embracing the Lutheran opinions. At the same time an alteration in the established forms of worship was first ventured upon at Wittemberg, by abolishing the celebration of private masses, and by giving the cup as well as the bread to the laity in the Lord's supper. In a short time, however, the new opinions were condemned by the university of Paris, and a refutation of them was attempted by Henry VIII. of England. But Luther was not to be thus intimidated. He published animadversions on both with as much acrimony as if he had been refuting the meanest adversary; and a controversy managed by such illustrious antagonists drew a general attention, and the Reformers daily gained new converts both in France and England.

6 Disputes among the Reformers.

But while the efforts of Luther were thus everywhere crowned with success, the divisions began to prevail which have since so much agitated the reformed churches. The first dispute was between Luther and Zuinglius concerning the manner in which the body and blood of Christ were present in the eucharist. Luther and his followers, though they had rejected the notion of transubstantiation, were nevertheless of opinion that the body and blood of Christ were really present in the Lord's supper, in a way which they could not pretend to explain. Carlostadt, who was Luther's colleague, first suggested another view of the subject, which was afterwards confirmed and illustrated by Zuinglius, namely, that the body and blood of Christ were not really present in the eucharist; and that the bread and wine were no more than external symbols to excite the remembrance of Christ's sufferings in the minds of those who received it. Both parties maintained their tenets with the utmost obstinacy; and, by their divisions, first gave their adversaries an argument against them, which to this day the Catholics urge with great force; namely, that the Protestants are so divided, that it is impossible to know who is right or wrong; and that there cannot be a stronger proof than these divisions, that the whole doctrine is false.

7 Disturbances in Germany.

To these intestine divisions were added the horrors of a civil war, occasioned by oppression on the one hand, and enthusiasm on the other. In 1525, a great number of seditious fanatics arose on a sudden in different parts of Germany, took arms, united their forces, and made war against the empire, laying waste the country with fire and sword, and committing everywhere the greatest cruelties. The greatest part of this furious mob was composed of peasants and vassals, who groaned under heavy burdens, and declared that they were no longer able to bear the despotic government of their chiefs; and hence this sedition had the name of *the rustic war*, or the *war of the peasants*. At first this rabble declared, that they had no other motives than the redress of their grievances; but no sooner had the enthusiast Munzer, or Muntter, the anabaptist, put himself at their head, than the face of things was entirely changed, and the civil commotions in Saxony and Thuringia exceedingly increased, of which an account is given under the article Anabaptists.

In the mean time Frederic, surnamed the *Wise*, elector of Saxony, and Luther's great patron, departed this life, and was succeeded by his brother John. Frederic, though he had protected and encouraged Luther, yet was at no pains to introduce the reformed religion into

his

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his dominions. But with his ſucceſſor it was otherwiſe; for he, convinced that Luther's doctrine muſt ſoon be totally deſtroyed and ſuppreſſed unleſs it received a ſpeedy and effectual ſupport, ordered Luther and Melancthon to draw up a body of laws relating to the form of eccleſiaſtical government, the method of public worſhip, &c. which was to be proclaimed by heralds throughout his dominions. This example was followed by all the princes and ſtates of Germany who renounced the papal ſupremacy; and a like form of worſhip, diſcipline, and government, was thus introduced into all the churches which diſſented from that of Rome. This open renunciation of the Romiſh juriſdiction ſoon changed the face of affairs: and the patrons of Popery ſoon intimated, in a manner not at all ambiguous, that they intended to make war on the Lutheran party; which would certainly have been put in execution, had not the troubles that took place in Europe diſconcerted their meaſures. On the other hand, the Lutherans, appriſed of theſe hoſtile intentions, began alſo to deliberate on a proper plan of defence againſt that ſuperſtitious violence with which they were in danger of being aſſailed. The diet of the empire aſſembled at Spire, in the year 1526; where the emperor's ambaſſadors were deſired to uſe their utmoſt endeavours to ſuppreſs all diſputes about religion, and to inſiſt upon the rigorous execution of the ſentence which had been pronounced againſt Luther and his followers at Worms. The greateſt part of the German princes oppoſed this motion with the utmoſt reſolution, declaring that they could not execute that ſentence, nor come to any determination with regard to the doctrines by which it had been occaſioned, before the whole matter was ſubmitted to the deciſion of a council lawfully aſſembled; alleging farther, that the deciſion of controverſies of this nature belonged properly to it, and to it alone. This opinion, after long and very warm debates, was adopted by a great majority, and at length conſented to by the whole aſſembly: for it was unanimouſly agreed to preſent a ſolemn addreſs to the emperor, intreating him to aſſemble, without delay, a free and general council; while in the mean time it was alſo agreed, that the princes of the empire ſhould, in their reſpective dominions, be at liberty to manage eccleſiaſtical affairs in the manner they ſhould think moſt proper; yet ſo as to be able to give to God and the emperor a proper account of their adminiſtration when it ſhould be required of them.

8 Reformation eſtabliſhed in Saxony.

9 Reſolutions at the diet of Spire favourable to the Reformation.

Theſe reſolutions proved extremely favourable to the cauſe of reformation; neither had the emperor any leiſure for ſome time to give diſturbance to the reformed. The war, which at this time enſued between him and the pope, gave the greateſt advantage to the friends of the reformed, and conſiderably augmented their number. Several princes, whom the fear of perſecution and puniſhment had hitherto prevented from lending their aſſiſtance, publicly renounced the Romiſh ſuperſtition, and introduced among their ſubjects the ſame forms of religious worſhip, and the ſame ſyſtem of doctrine, that had been received in Saxony. Others, though placed in ſuch circumſtances as diſcouraged them from acting in an open manner againſt the intereſts of the Roman pontiff, were, however, far from diſcovering the ſmalleſt oppoſition to thoſe who withdrew the people from his deſpotic yoke; nor did they moleſt the private aſſemblies of thoſe who had ſeparated themſelves from the church of Rome. And in general, all the Germans who, before theſe reſolutions of the diet of Spire, had rejected the papal diſcipline and doctrine, were now, in conſequence of the liberty they enjoyed, wholly employed in bringing their ſchemes and plans to a certain degree of conſiſtence, and in adding vigour and firmneſs to the cauſe in which they were engaged. But this tranquility and liberty was of no long duration. In 1529, a new diet was aſſembled at the ſame place by the emperor, after he had quieted the troubles in various parts of his dominions, and concluded a peace with the pope. The power which had been granted to princes of managing eccleſiaſtical affairs till the meeting of a general council, was now revoked by a majority of votes; and every change declared unlawful that ſhould be introduced into the doctrine, diſcipline, or worſhip of the eſtabliſhed religion, before the determination of the approaching council was known. This decree was conſidered as iniquitous and intolerable by the elector of Saxony, the landgrave of Heſſe, and other members of the diet, who were perſuaded of the neceſſity of a reformation. The promiſe of ſpeedily aſſembling a general council, they looked upon to be an artifice of the church of Rome; well knowing, that a free and lawful council would be the laſt thing to which the pope would conſent. When, therefore, they found that all their arguments and remonſtrances made no impreſſion upon Ferdinand the emperor's brother, who preſided in the diet, Charles himſelf being then at Barcelona, they entered a ſolemn proteſt againſt this decree on the 19th of April, and appealed to the emperor and a future council. Hence aroſe the denomination of *Proteſtants*, which from this period has been given to thoſe who ſeparate from the communion of the church of Rome. The princes of the empire who entered this proteſt were, John elector of Saxony; George elector of Brandenburg; Erneſt and Francis dukes of Lunenburgh; the landgrave of Heſſe; and the prince of Anhalt. Theſe were ſeconded by 13 imperial towns, viz. Straſburg, Ulm, Nuremberg, Conſtance, Rottingen, Windſeim, Memingen, Nortlingen, Lindaw, Kempton, Heilbron, Wiſſemburg; and St Gall.

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10 Revoked by the emperor.

11 Origin of the name Proteſtants

The diſſenting princes, who were the protectors and heads of the reformed churches, had no ſooner entered their proteſt, than they ſent proper perſons to the emperor, who was then upon his paſſage from Spain to Italy, to acquaint him with their proceedings in this matter. The miniſters employed in this commiſſion executed it with the greateſt intrepidity and preſence of mind; but the emperor, exaſperated at the audacity of thoſe who preſumed to differ from him, cauſed the ambaſſadors to be arreſted. The news of this violent ſtep made the Proteſtant princes conclude, that their perſonal ſafety, and the ſucceſs of their cauſe, depended entirely upon their own courage and union. They determined, therefore, to enter into a ſolemn confederacy: for which purpoſe they held ſeveral meetings at Rot, Nuremberg, Smalcald, and other places: but ſo different were their opinions and views, that they could determine upon nothing.

One great obſtacle to the intended confederacy was the diſpute which had ariſen between Luther and Zuinglius concerning the real preſence of Chriſt in the Lord's Supper. To terminate this diſpute, if poſſible, Philip, landgrave of Heſſe, invited, in the year 1529, to a con-

12 Conference between Luther and Zuinglius.

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a confutation of Melanc[illegible], Luther and Pomeranus, together with [illegible] who claimed to be superior to both of them in learning, chose to enter the lists with the latter, which was attended with the following events. [illegible] Zwinglius and Œcolampadius. Luther and Œcolampadius [illegible] Zwinglius was attacked by Melanchthon, Bucer, and others, chiefly on account of his opinion of the nature and design of the Lord's Supper, but also in consequence of the following: he was supposed to have adopted erroneous principles concerning the divinity of Christ, the efficacy of the divine word, original sin, and some other parts of the Christian doctrine. This illustrious reformer, however, cleared himself from the greatest part of these charges with the most triumphant evidence, and in such a manner as was satisfactory even to Luther himself: but their dissension concerning the manner of Christ's presence in the eucharist still remained; nor could either of the contending parties be persuaded to abandon, or even to modify, their opinions on that matter. The only advantage, therefore, which resulted from the meeting was, that the jarring doctors formed a kind of truce, by agreeing to a mutual toleration of their sentiments, and leaving to the disposal of Providence the cure of their divisions.

In the mean time news were received that the emperor designed to come into Germany, with a view to terminate all religious differences at the approaching diet of Augsburg. Having foreseen some of the consequences of these disputes, and, besides, taken the advice of men of wisdom, sagacity, and experience, he became at certain times more cool in his proceedings, and more impartial in his opinions both of the contending parties and the merits of the cause. He, therefore, in an interview with the pope at Bologna, insisted, in the most serious and urgent manner on the necessity of a general council. His remonstrances and expostulations, however, could not move the pontiff; who maintained with zeal the papal prerogatives, reproached the emperor with an ill-judged clemency, and alleged that it was the duty of that prince to support the church, and to execute speedy vengeance upon that obstinate heretical faction who dared to call in question the authority of Rome and its pontiff. To this discourse the emperor paid no regard; looking upon it as a most iniquitous thing, and a measure directly opposite to the laws of the empire, to condemn unheard a set of men who had always approved themselves good citizens, and deserved well of their country in several respects. Hitherto indeed it was not easy for the emperor to form a clear idea of the matters in debate, since there was no regular system as yet composed, by which it might be known with certainty what were the true causes of Luther's opposition to the pope. The elector of Saxony, therefore, ordered Luther, and other eminent divines, to commit to writing the chief articles of their religious system, and the principal points in which they differed from the church of Rome. Luther, in compliance with this order, delivered to the elector at Torgaw 17 articles which had been agreed upon in a conference at Sultzbach in 1529; from whence these received the name of *the articles of Torgaw*. But though these were deemed by Luther a sufficient declaration of the sentiments of the reformers, yet it was judged proper to enlarge them, in order to give perspicuity to their arguments, and strength to their cause. In this work Melancthon was employed; in which he showed a proper deference to the councils of Luther, and expressed his sentiments and doctrine with the greatest elegance and perspicuity; and thus came forth to view the famous *Confession of Augsburg*.

15 Origin of the confession of Augsburg.

On the 15th of June 1530, Charles arrived at Augsburg, and the diet was opened five days after. The Protestants received a formal permission to present an account of their tenets to the diet on the 25th of the same month; in consequence of which, at the time appointed, Christian Bayer, chancellor of Saxony, read, in the German language, before the emperor and the princes assembled, the confession of Augsburg abovementioned. It contained 28 chapters, of which 21 were employed in representing the religious opinions of the Protestants, and the other seven in pointing out the errors and superstitions of the church of Rome. The princes heard it with the deepest attention and recollection of mind: it confirmed some in the principles they had embraced; surprised others: and many, who before this time had little or no idea of the religious sentiments of Luther, were now not only convinced of their innocence, but delighted with their purity and simplicity. The copies of this Confession, which after being read were delivered to the emperor, were signed by John elector of Saxony, George marquis of Brandenburg, Ernest duke of Lunenburg, Philip landgrave of Hesse, Wolfgang prince of Anhalt, and by the Imperial cities of Nuremberg and Reutlingen.

14 It is presented to the emperor.

The creatures of the church of Rome who were present at this diet employed John Faber, afterwards bishop of Vienna, together with Eckius, and another doctor named *Cocklæus*, to draw up a refutation of the Protestant confession: which refutation having been publicly read, the emperor required the Protestant members to acquiesce in it, and put an end to the religious disputes by an unlimited submission to the opinions and doctrines contained in this answer. But this demand was far from being complied with. The Protestants declared on the contrary, that they were by no means satisfied with the reply of their adversaries; and earnestly desired a copy of it, that they might more fully demonstrate its extreme insufficiency and weakness. But this reasonable request was refused by the emperor; who interposed his supreme authority to prevent any farther proceedings in this matter, and solemnly prohibited the publication of any new writings or declarations that might contribute to lengthen out these religious debates. This, however, did not reduce the Protestants to silence. The divines of that communion, who had been present at the diet, endeavoured to recollect the arguments and objections employed by Faber, and had again recourse to the pen of Melancthon, who refuted them in an ample and satisfactory manner in a piece which was presented to the emperor on the 22d of September, but which Charles refused to receive. This answer was afterwards enlarged by Melancthon, when he had obtained a copy of Faber's reply; and was published in the year 1531, with the other pieces that related to the doctrine and discipline of the Lutheran church, under the title of *A Defence of the Confession of Augsburg*.

15 A refutation of it, in which the Protestants are ordered to acquiesce.

Matters now began to draw towards a crisis. There were only three ways of bringing to a conclusion these religious

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religious differences. 1. To grant the proteſtants a toleration and privilege of ſerving God as they thought proper: 2. To compel them to return to the church of Rome by the violent methods of perſecution: or, 3. That a reconciliation ſhould be made, upon fair, candid, and equitable terms, by engaging each of the parties to temper their zeal with moderation, to abate reciprocally the rigour of their pretenſions, and remit ſomething of their reſpective claims. The third expedient was moſt generally approved of, being peculiarly agreeable to all who had at heart the welfare of the empire; nor did the pope ſeem to look upon it either with averſion or contempt. Various conferences therefore were held between perſons eminent for piety and learning on both ſides; and nothing was omitted that might have the leaſt tendency to calm the animoſities and heal the diviſions which reigned between the contending parties. But the differences were too great to admit of a reconciliation; and therefore the votaries of Rome had recourſe to the powerful arguments of imperial edicts, and the force of the ſecular arm. On the 19th of November, a ſevere decree was iſſued out by the expreſs order of the emperor (during the abſence of the Heſſian and Saxon princes, who were the chief ſupporters of the proteſtant cauſe), in which every thing was manifeſtly adapted to deject the friends of religious liberty, excepting only a faint and dubious promiſe of engaging the pope to aſſemble a general council about ſix months after the ſeparation of the diet. In this decree the dignity and excellence of the Popiſh religion were extolled beyond meaſure, a new degree of ſeverity and force was added to that which had been publiſhed at Worms againſt Luther and his adherents, the changes which had been introduced into the doctrine and diſcipline of the Proteſtant churches were ſeverely cenſured, and a ſolemn order was addreſſed to the princes, cities, and ſtates, who had thrown off the Papal yoke, to return to their allegiance to Rome, on pain of incurring the indignation and vengeance of the emperor as the patron and protector of the church. Of this formidable decree the elector of Saxony and confederated princes were no ſooner informed, than they aſſembled in order to deliberate on the meaſures proper to be taken in ſuch a criſis. In the years 1530 and 1531 they met, firſt at Smalcald, and afterwards at Francfort, where they formed a ſolemn alliance and confederacy, with the intention of defending vigorouſly their religion and liberties againſt the dangers and encroachments with which they were threatened by the edict of Augſburg, without attempting, however, any thing offenſive againſt the votaries of Rome; and into this confederacy they invited the kings of England, France, Denmark, &c. leaving no means unemployed that might corroborate and cement this important alliance.

16 Severe decree againſt the Proteſtants.

17 The league of Smalcald.

This confederacy was at firſt oppoſed by Luther, from an apprehenſion of the calamities and troubles which it might produce; but at laſt, perceiving the neceſſity of it, he conſented; though he uncharitably, as well as imprudently, refuſed to comprehend in it the followers of Zuinglius among the Swiſs, together with the German ſtates and cities who had adopted the ſentiments and confeſſion of Bucer. In the invitation addreſſed to Henry VIII. of England, whom the confederate princes were willing to declare the head and protector of their league, the following things, among others, were expreſsly ſtipulated: That the king ſhould encourage, promote, and maintain, the true doctrine of Chriſt as it was contained in the confeſſion of Auſburg, and defend the ſame at the next general council: that he ſhould not agree to any council ſummoned by the biſhop of Rome, but proteſt againſt it; and neither ſubmit to its decrees, nor ſuffer them to be reſpected in his dominions: that he ſhould never allow the Roman pontiff to have any pre-eminence or juriſdiction in his dominions; that he ſhould advance 100,000 crowns for the uſe of the confederacy, and double that ſum if it became neceſſary: all which articles the confederate princes were equally obliged to obſerve on their part. To theſe demands the king replied, he would maintain and promote the true doctrine of Chriſt; but, at the ſame time, as the true ground of that doctrine lay only in the holy Scriptures, he would not accept at any one's hand what ſhould be his own faith, or that of his kingdom; and therefore deſired that they would ſend over two learned men to confer with him, in order to promote a religious union between him and the confederates. However, he declared himſelf of their opinion with regard to the meeting of a free general council, and promiſed to join with them in all ſuch councils for the defence of the true doctrine; but thought the regulation of the ceremonial part of religion, being a matter of indifference, ought to be left to the choice of each ſovereign for his own dominions. After this the king gave them a ſecond anſwer more full and ſatisfactory; but after the execution of queen Anne, this negociation came to nothing. On the one hand, the king grew cold when he perceived that the confederates were no longer of uſe to him in ſupporting the validity of his marriage; and, on the other hand, the German princes became ſenſible that they could never ſucceed with Henry unleſs they allowed him an abſolute dictatorſhip in matters of religion.

18 Invitation to Henry VIII. of England.

While every thing thus tended to an open war between the two oppoſite parties, the elector Palatine, and the elector of Mentz, offered their mediation, and endeavoured to procure a reconciliation. The emperor himſelf, for various reaſons, was at this time inclined to peace: for, on the one hand, he ſtood in need of ſuccours againſt the Turks, which the Proteſtant princes refuſed to grant as long as the edicts of Worms and Augſburg remained in force; and, on the other, the election of his brother Ferdinand to the dignity of king of the Romans, which had been carried by a majority of votes at the diet of Cologne in 1531, was by the ſame princes conteſted, as being contrary to the fundamental laws of the empire. In conſequence of all this, after many negociations and projects of reconciliation, a treaty of peace was concluded at Nuremberg in 1532, between the emperor and the proteſtant princes, on the following conditions; *viz.* That the latter ſhould furniſh a ſubſidy for carrying on the war againſt the Turks, and acknowledge Ferdinand lawful king of the Romans; and that the emperor on his part ſhould abrogate and annul the edicts of Worms and Augſburg, and allow the Lutherans the free and undiſturbed exerciſe of their religious doctrine and diſcipline, until a rule of faith was fixed either in the free general council that was to be aſſembled in the ſpace of ſix months, or in a diet of the empire.

19 Peace of Nuremberg concluded.

Soon after the concluſion of the peace at Nuremberg

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died John Elector of Saxony, who was succeeded by his son John Frederic, a prince of invincible fortitude and [illegible], but whose reign was little better than one continued train of disappointments and calamities. The religious [illegible], however, gave new vigour to the reformation. Those who had hitherto been only secret [illegible] to the Roman pontiff, now publicly threw off his yoke; and various cities and provinces of Germany [illegible] themselves under the religious standards of Luther. On the other hand, as the emperor had now no other hope of terminating the religious disputes but by the meeting of a general council, he repeated his requests to the pope for that purpose. The pontiff (Clement VII), whom the history of past councils filled with the greatest uneasiness, endeavoured to retard what he could not with decency refuse. At last, in 1533, he made a proposal by his legate to assemble a council at Mantua, Placentia, or Bologna; but the Protestants refused their consent to the nomination of an Italian council, and insisted that a controversy which had its rise in the heart of Germany, should be determined within the limits of the empire. The pope, by his usual artifices, eluded the performance of his own promise; and, in 1534, was cut off by death, in the midst of his stratagems. His successor Paul III. seemed to show less reluctance to the assembling a general council, and in the year 1535 expressed his inclination to convoke one at Mantua; and, the year following, actually sent circular letters for that purpose through all the states and kingdoms under his jurisdiction. This council was summoned by a bull issued out on the 2d of June 1536, to meet at Mantua the following year: but several obstacles prevented its meeting; one of the most material of which was, that Frederic duke of Mantua had no inclination to receive at once so many guests, some of them very turbulent, into the place of his residence. On the other hand, the Protestants were firmly persuaded that, as the council was assembled in Italy, and by the authority of the pope alone, the latter must have had an undue influence in that assembly; of consequence, that all things must have been carried by the votaries of Rome. For this reason they assembled at Smalcald in the year 1537, where they solemnly protested against this partial and corrupt council, and, at the same time, had a new summary of their doctrine drawn up by Luther, in order to present it to the assembled bishops if it should be required of them. This summary, which had the title of *The Articles of Smalcald*, is commonly joined with the creeds and confessions of the Lutheran church.

20 A general council proposed.

21 Protestation against it.

22 Fruitless schemes of accommodation.

After the meeting of the general council in Mantua was thus prevented, many schemes of accommodation were proposed both by the emperor and the Protestants; but, by the artifices of the church of Rome, all of them came to nothing. In 1541, the emperor appointed a conference at Worms on the subject of religion, between persons of piety and learning chosen from the contending parties. This conference, however, was, for certain reasons, removed to the diet which was to be held at Ratisbon that same year, and in which the principal subject of deliberation was a memorial presented by a person unknown, containing a project of peace. But the conference produced no other effect than a mutual agreement of the contending parties to refer their matters to a general council, or, if the meeting of such a council should be prevented, to the next German diet.

This resolution was rendered ineffectual by a variety of incidents, which widened the breach, and put off to a farther day the deliberations which were designed to heal it. The pope ordered his legate to declare to the diet of Spire, assembled in 1542, that he would, according to the promise he had already made, assemble a general council, and that Trent should be the place of its meeting, if the diet had no objection to that city. Ferdinand, and the princes who adhered to the cause of the pope, gave their consent to this proposal; but it was vehemently objected to by the Protestants, both because the council was summoned by the authority of the pope only, and also because the place was within the jurisdiction of the Pope; whereas they desired a free council, which should not be biassed by the dictates, nor awed by the proximity, of the pontiff. But this protestation produced no effect. Paul III. persisted in his purpose, and issued out his circular letters for the convocation of the council, with the approbation of the emperor. In justice to this pontiff, however, it must be observed, that he showed himself not to be averse to every reformation. He appointed four cardinals, and three other persons eminent for their learning, to draw up a plan for the reformation of the church in general, and of the church of Rome in particular. The reformation proposed in this plan was indeed extremely superficial and partial, yet it contained some particulars which could scarcely have been expected from those who composed it. They complained of the pride and ignorance of the bishops, and proposed that none should receive orders but learned and pious men; and that therefore care should be taken to have proper masters for the instruction of youth. They condemned translations from one benefice to another, grants of reservation, non-residence, and pluralities. They proposed that some convents should be abolished; that the liberty of the press should be restrained and limited; that the colloquies of Erasmus should be suppressed: that no ecclesiastic should enjoy a benefice out of his own country; that no cardinal should have a bishopric; that the questors of St Anthony and several other saints should be abolished; and, which was the best of all their proposals, that the effects and personal estates of ecclesiastics should be given to the poor. They concluded with complaining of the prodigious number of indigent and ragged priests who frequented St Peter's church; and declared, that it was a great scandal to see the whores lodged so magnificently at Rome, and riding through the streets on fine mules, while the cardinals and other ecclesiastics accompanied them in the most courteous manner.—This plan of reformation was turned into ridicule by Luther and Sturmius; and indeed it left unredressed the most intolerable grievances of which the Protestants complained.

23 Council of Trent proposed.

24 Plan of reformation proposed by the pope.

25 War between the emperor and the Protestants.

All this time the emperor had been labouring to persuade the Protestants to consent to the meeting of the council at Trent; but when he found them fixed in their opposition to this measure, he began to listen to the sanguinary measures of the pope, and resolved to terminate the disputes by force of arms. The elector of Saxony and landgrave of Hesse, who were the chief supporters of the Protestant cause, upon this took proper

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proper measures to prevent their being surprised and overwhelmed by a superior force; but, before the horrors of war commenced, the great reformer Luther died in peace at Ayselben, the place of his nativity, in 1546.

The emperor and the pope had mutually resolved on the destruction of all who should dare to oppose the council of Trent. The meeting of it was to serve as a signal for taking up arms; and accordingly its deliberations were scarcely begun in 1546, when the Protestants perceived undoubted signs of the approaching storm, and a formidable union betwixt the emperor and pope, which threatened to crush and overwhelm them at once. This year indeed there had been a new conference at Ratisbon upon the old subject of accommodating differences in religion; but from the manner in which the debates were carried on, it plainly appeared that these differences could only be decided in the field of battle. The council of Trent, in the mean time, promulgated their decrees; while the reformed princes, in the diet of Ratisbon, protested against their authority, and were on that account proscribed by the emperor, who raised an army to reduce them to obedience. See *Father Paul's History of the Council of Trent*, and our articles Paul (Father), and Trent.

The elector of Saxony and the landgrave of Hesse led their forces into Bavaria against the emperor, and cannonaded his camp at Ingolditalt. It was supposed that this would bring on an engagement, which would probably have been advantageous to the cause of the reformed; but this was prevented, chiefly by the perfidy of Maurice duke of Saxony, who invaded the dominions of his uncle. Divisions were also fomented among the confederate princes, by the dissimulation of the emperor; and France failed in paying the subsidy which had been promised by its monarch: all which so discouraged the heads of the Protestant party, that their army soon dispersed, and the elector of Saxony was obliged to direct his march homewards. But he

26 Elector of Saxony defeated and taken prisoner.

was pursued by the emperor, who made several forced marches, with a view to destroy his enemy before he should have time to recover his vigour. The two armies met near Muhlberg, on the Elbe, on the 24th of April 1547; and, after a bloody action, the elector was entirely defeated, and himself taken prisoner.—Maurice, who had so basely betrayed him, was now declared elector of Saxony; and by his intreaties Philip landgrave of Hesse, the other chief of the Protestants, was persuaded to throw himself on the mercy of the emperor, and to implore his pardon. To this he consented, relying on the promise of Charles for obtaining forgiveness, and being restored to liberty; but, notwithstanding these expectations, he was unjustly detained prisoner, by a scandalous violation of the most solemn convention. It is said that the emperor ratracted his promise, and deluded this unhappy prince by the ambiguity of two German words. History indeed can scarce afford a parallel to the perfidious, mean-spirited, and despotic behaviour of the emperor in the present case. After having received in public the humble submission of the prince on his knees, and after having set him at liberty by a solemn treaty, he had him arrested anew without any reason, nay, without any pretence, and kept him close prisoner for several years. When Maurice remonstrated against this new confinement, the emperor answered, that he had never promised that the landgrave should not be imprisoned anew, but only that he should be exempted from perpetual imprisonment; and, to support this assertion, he produced the treaty, in which his ministers had perfidiously foisted *ewiger gefangnis*, which signifies a "perpetual prison," instead of *einiger gefangnis*, which signifies "any prison." This, however, is contested by some historians.

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The affair of the Protestants now seemed to be desperate. In the diet of Augsburg, which was soon after called, the emperor required the Protestants to leave the decision of these religious disputes to the wisdom of the council which was to meet at Trent. The greatest part of the members consented to this proposal, being convinced by the powerful argument of an imperial army, which was at hand to dispel the darkness from the eyes of such as might otherwise have been blind to the force of Charles's reasoning. However this general submission did not produce the effect which was expected from it. A plague which broke out, or was said to do so, in the city, caused the greatest part of the bishops to retire to Bologna; by which means the council was in effect dissolved, nor could all the intreaties and remonstrances of the emperor prevail upon the pope to re-assemble it without delay. During this interval therefore, the emperor judged it necessary to fall upon some method of accommodating the religious differences, and maintaining peace until the council so long expected should be finally obtained. With this view he ordered Julius Pelugius bishop of Naumberg, Michael Sidonius, a creature of the pope, and John Agricola, a native of Ayselben, to draw up a formulary which might serve as a rule of faith and worship, till the council should be assembled: but as this was only a temporary expedient, and had not the force of a permanent or perpetual institution, it thence obtained the name of the *Interim*.

27 The council suddenly dissolved.

28 A formulary drawn up by the emperor.

This project of Charles was formed partly with a design to vent his resentment against the pope, and partly to answer other political purposes. It contained all the essential doctrines of the church of Rome, though considerably softened by the artful terms which were employed, and which were quite different from those employed before and after this period by the council of Trent. There was even an affected ambiguity in many of the expressions, which made them susceptible of different senses, and applicable to the sentiments of both communions. The consequence of all this was, that the imperial creed was reprobated by both parties. However, it was promulgated with great solemnity by the emperor at Augsburg. The elector of Mentz, without even asking the opinion of the princes, present, gave a sanction to this formula, as if he had been commissioned to represent the whole diet. Many kept silence through fear, and that silence was interpreted as a tacit consent. Some had the courage to oppose it, and these were reduced by force of arms; and the most deplorable scenes of bloodshed and violence were acted throughout the whole empire. Maurice, elector of Saxony, who had hitherto kept neutral, now assembled the whole of his nobility and clergy, in order to deliberate on this critical affair. At the head of the latter was Melancthon, whose word was respected as a law among the Protestants. But this

29 Displeases both parties.

[illegible] this man had not the courage of Luther; and was therefore on all occasions ready to make concessions, and to propose schemes of accommodation. In the present case, therefore, he gave it as his opinion, that the work of [illegible] called *Interim* could not by any means be adopted by the protestants; but at the same time he [illegible], that he saw no reason why this book might not be approved, adopted, and received, as an [illegible] that did not relate to the essential parts of religion, and which he accounted indifferent. But this scheme, instead of cementing the differences, made them much worse than ever; and produced a division among the Protestants themselves, which might have overthrown the Reformation entirely, if the emperor and pope had seized the opportunity.

[illegible] A new council proposed at Trent.

In the year 1549, the pope (Paul III.) died; and was succeeded by Julius III. who, at the repeated solicitations of the emperor, consented to the re-assembling of a council at Trent. A diet was again held at Augsburg under the cannon of an imperial army, and Charles laid the matter before the princes of the empire. Most of those present gave their consent to it, and among the rest Maurice elector of Saxony; who consented on the following conditions: 1. That the points of doctrine which had already been decided there, should be re-examined. 2. That this examination should be made in presence of the Protestant divines. 3. That the Saxon Protestants should have a liberty of voting as well as of deliberating in the council. 4. That the pope should not pretend to preside in that assembly, either in person or by his legates. This declaration of Maurice was read in the diet, and his deputies insisted upon its being entered into the registers which the archbishop of Mentz obstinately refused. The diet was concluded in the year 1551; and, at its breaking up, the emperor desired the assembled princes and states to prepare all things for the approaching council, and promised to use his utmost endeavours to procure moderation and harmony, impartiality and charity, in the transactions of that assembly.

On the breaking up of the diet, the Protestants took such steps as they thought most proper for their own safety. The Saxons employed Melancthon, and the Wurtembergers Brengius, to draw up Confessions of Faith to be laid before the new council. The Saxon divines, however, proceeded no farther than Nuremberg, having received secret orders from Maurice to stop there: For the elector, perceiving that Charles had formed designs against the liberties of the German princes, resolved to take the most effectual measures for crushing his ambition at once. He therefore entered with the utmost secrecy and expedition into an alliance with the king of France, and several of the German princes, for the security of the rights and liberties of the empire; after which, assembling a powerful army in 1552, he marched against the emperor, who lay with a handful of troops at Inspruck, and expected no such thing. By this sudden and unforeseen accident Charles was so much dispirited, that he was willing to make peace almost on any terms. The consequence of this was, that he concluded a treaty at Passau, which by the Protestants is considered as the basis of their religious liberty. By the first three articles of this treaty it was agreed, that Maurice and the confederates should lay down their arms, and lend their troops to Ferdinand to assist him against the Turks; and that the landgrave of Hesse should be set at liberty. By the fourth it was agreed, that the Rule of Faith called the *Interim* should be considered as null and void: that the contending parties should enjoy the free and undisturbed exercise of their religion, until a diet should be assembled to determine amicably the present disputes (which diet was to meet in the space of six months); and that this religious liberty should continue always, in case it should be found impossible to come to an uniformity in doctrine and worship. It was also determined, that all those who had suffered banishment, or any other calamity, on account of their having been concerned in the league or war of Smalcald, should be reinstated in their privileges, possessions, and employments; that the imperial chamber at Spire should be open to the Protestants as well as to the Catholics; and that there should always be a certain number of Lutherans in that high court.—To this peace Albert, marquis of Brandenburg, refused to subscribe; and continued the war against the Roman-catholics, committing such ravages in the empire, that a confederacy was at last formed against him. At the head of this confederacy was Maurice elector of Saxony, who died of a wound he received in a battle fought on the occasion in 1553.

32 The emperor is surprised, and forced to a peace by the elector of Saxony.

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The assembling of the diet promised by Charles was prevented by various incidents; however it met at Augsburg in 1555, where it was opened by Ferdinand in name of the emperor, and terminated those deplorable calamities which had so long desolated the empire. After various debates, the following acts were passed, on the 25th of September: That the Protestants who followed the Confession of Augsburg should be for the future considered as entirely free from the jurisdiction of the Roman pontiff, and from the authority and superintendance of the bishops; that they were left at perfect liberty to enact laws for themselves relating to their religious sentiments, discipline, and worship; that all the inhabitants of the German empire should be allowed to judge for themselves in religious matters, and to join themselves to that church whose doctrine and worship they thought the most pure and consonant to the spirit of true Christianity; and that all those who should injure or persecute any person under religious pretences, and on account of their opinions, should be declared and proceeded against as public enemies of the empire, invaders of its liberty, and disturbers of its peace.

33 Treaty of Augsburg.

Thus was the Reformation established in many parts of the German empire, where it continues to this day; nor have the efforts of the Popish powers at any time been able to suppress it, or even to prevent it from gaining ground. It was not, however, in Germany alone that a reformation of religion took place. Almost all the kingdoms of Europe began to open their eyes to the truth about the same time. The reformed religion was propagated in Sweden, soon after Luther's rupture with the church of Rome, by one of his disciples named *Olaus Petri*. The zealous efforts of this missionary were seconded by Gustavus Vasa, whom the Swedes had raised to the throne in place of Christiern king of Denmark, whose horrid barbarity lost him the crown. This prince, however, was as prudent

34 Account of the Reformation in Sweden.

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prudent as he was zealous; and, as the minds of the Swedes were in a fluctuating ſtate, he wiſely avoided all kind of vehemence and precipitation in ſpreading the new doctrine. Accordingly, the firſt object of his attention was the inſtruction of his people in the ſacred doctrines of the Holy Scriptures: for which purpoſe he invited into his dominions ſeveral learned Germans, and ſpread abroad through the kingdom the Swediſh tranſlation of the Bible that had been made by Olaus Petri. Some time after this, in 1526, he appointed a conference at Upſal, between this reformer and Peter Gallius, a zealous defender of the ancient ſuperſtition, in which each of the champions was to bring forth his arguments, that it might be ſeen on which ſide the truth lay. In this diſpute Olaus obtained a ſignal victory; which contributed much to confirm Guſtavus in his perſuaſion of the truth of Luther's doctrine, and to promote its progreſs in Sweden. The following year another event gave the finiſhing ſtroke to its propagation and ſucceſs. This was the aſſembly of the ſtates at Weſteraas, where Guſtavus recommended the doctrine of the reformers with ſuch zeal, that, after warm debates fomented by the clergy in general, it was unanimouſly reſolved that the reformation introduced by Luther ſhould have place in Sweden. This reſolution was principally owing to the firmneſs and magnanimity of Guſtavus, who declared publicly, that he would lay down the ſceptre and retire from the kingdom, rather than rule a people enſlaved by the orders and authority of the pope, and more controuled by the tyranny of their biſhops than by the laws of their monarch. From this time the papal empire in Sweden was entirely overthrown, and Guſtavus declared head of the church.

35 In Denmark.

In Denmark, the reformation was introduced as early as the year 1521, in conſequence of the ardent deſire diſcovered by Chriſtiern II. of having his ſubjects inſtructed in the doctrines of Luther. This monarch, notwithſtanding his cruelty, for which his name has been rendered odious, was nevertheleſs deſirous of delivering his dominions from the tyranny of the church of Rome. For this purpoſe, in the year 1520, he ſent for Martin Reinard, one of the diſciples of Carloſtadt, out of Saxony, and appointed him profeſſor of divinity at Hafnia; and after his death, which happened in 1521, he invited Carloſtadt himſelf to fill that important place. Carloſtadt accepted of this office indeed, but in a ſhort time returned to Germany; upon which Chriſtiern uſed his utmoſt endeavours to engage Luther to viſit his dominions, but in vain. However, the progreſs of Chriſtiern, in reforming the religion of his ſubjects, or rather of advancing his own power above that of the church, was checked, in the year 1523, by a conſpiracy, by which he was depoſed and baniſhed; his uncle Frederic, duke of Holſtein and Sleſwic, being appointed his ſucceſſor.

Frederic conducted the reformation with much greater prudence than his predeceſſor. He permitted the Proteſtant doctors to preach publicly the ſentiments of Luther, but did not venture to change the eſtabliſhed government and diſcipline of the church. However, he contributed greatly to the progreſs of the reformation, by his ſucceſsful attempts in favour of religious liberty in an aſſembly of the ſtates held at Odenſee in 1527. Here he procured the publication of a famous edict, by which every ſubject of Denmark was declared free either to adhere to the tenets of the church of Rome, or to the doctrine of Luther. The papal tyranny was totally deſtroyed by his ſucceſſor Chriſtiern III. He began by ſuppreſſing the deſpotic authority of the biſhops, and reſtoring to their lawful owners a great part of the wealth and poſſeſſions which the church had acquired by various ſtratagems. This was followed by a plan of religious doctrine, worſhip, and diſcipline, laid down by Bugenhagius, whom the king had ſent for from Wittemberg for that purpoſe; and in 1539 an aſſembly of the ſtates at Odenſee gave a ſolemn ſanction to all theſe tranſactions.

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36 In France.

In France alſo, the reformation began to make ſome progreſs very early. Margaret queen of Navarre, ſiſter to Francis I. the perpetual rival of Charles V. was a great friend to the new doctrine; and it appears that, as early as the year 1523, there were in ſeveral of the provinces of France great numbers of people who had conceived the greateſt averſion both to the doctrine and tyranny of the church of Rome; among whom were many of the firſt rank and dignity, and even ſome of the epiſcopal order. But as their number increaſed daily, and troubles and commotions were excited in ſeveral places on account of the religious differences, the authority of the king intervened, and many perſons eminent for their virtue and piety were put to death in the moſt barbarous manner. Indeed Francis, who had either no religion at all, or, at beſt, no fixed and conſiſtent ſyſtem of religious principles, conducted himſelf towards the Proteſtants in ſuch a manner as beſt anſwered his private views. Sometimes he reſolved to invite Melancthon into France, probably with a view to pleaſe his ſiſter the queen of Navarre, whom he loved tenderly, and who had ſtrongly imbibed the Proteſtant principles. At other times he exerciſed the moſt infernal cruelty towards the reformed; and once made the following mad declaration, That if he thought the blood in his arm was tainted by the Lutheran hereſy, he would have it cut off; and that he would not ſpare even his own children, if they entertained ſentiments contrary to thoſe of the Catholic church.

About this time the famous Calvin began to draw the attention of the public, but more eſpecially of the queen of Navarre. His zeal expoſed him to danger; and the friends of the reformation, whom Francis was daily committing to the flames, placed him more than once in the moſt perilous ſituation, from which he was delivered by the interpoſition of the queen of Navarre. He therefore retired out of France to Baſil in Swiſſerland; where he publiſhed his Chriſtian Inſtitutions, and became afterwards ſo famous.

Thoſe among the French who firſt renounced the juriſdiction of the Romiſh church, are commonly called *Lutherans* by the writers of thoſe early times. Hence it has been ſuppoſed that they had all imbibed the peculiar ſentiments of Luther. But this appears by no means to have been the caſe: for the vicinity of the cities of Geneva, Lauſanne, &c. which had adopted the doctrines of Calvin, produced a remarkable effect upon the French Proteſtant churches; inſomuch that, about the middle of this century, they all entered into communion with the church of Geneva. The French Proteſtants were called *Huguenots** by their adverſaries,

* See Huguenots.

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versaries, by way of contempt. Their fate was very severe, being persecuted with unparalleled fury; and though many princes of the blood, and of the first nobility, had embraced their sentiments, yet in no part of the world did the reformers fixer so much [*]. At last all commotions were quelled by the fortitude and magnanimity of Henry IV. who in the year 1598 granted all his subjects full liberty of conscience by the famous Edict of Nantes, and seemed to have thoroughly established the reformation throughout his dominions. During the minority of Louis XIV. however, this edict was revoked by Cardinal Mazarine, since which time the Protestants have often been cruelly persecuted; nor was the profession of the reformed religion in France at any time so safe as in most other countries of Europe. See REVOLUTION.

[*] See France, [illegible] 141—149

37 In the Netherlands, &c.

In the other parts of Europe the opposition to the church of Rome was but faint and ambiguous before the diet of Augsburg. Before that period, however, it appears from undoubted testimony, that the doctrine of Luther had made a considerable, though probably secret, progress through Spain, Hungary, Bohemia, Britain, Poland, and the Netherlands; and had in all these countries many friends, of whom several repaired to Wittemberg, in order to enlarge their knowledge by means of Luther's conversation. Some of these countries threw off the Romish yoke entirely, and in others a prodigious number of families embraced the principles of the reformed religion. It is certain indeed, and the Roman-catholics themselves acknowledge it without hesitation, that the Papal doctrines and authority would have fallen into ruin in all parts of the world at once, had not the force of the secular arm been employed to support the tottering edifice. In the Netherlands particularly, the most grievous persecutions took place, so that by the emperor Charles V. upwards of 100,000 were destroyed, while still greater cruelties were exercised upon the people by his son Philip II. The revolt of the United Provinces, however, and motives of real policy, at last put a stop to these furious proceedings; and, though in many provinces of the Netherlands, the establishment of the Popish religion was still continued, the Protestants have been long free of the danger of persecution on account of their principles.

38 In Italy.

The reformation made a considerable progress in Spain and Italy soon after the rupture between Luther and the Roman pontiff. In all the provinces of Italy, but more especially in the territories of Venice, Tuscany, and Naples, the superstition of Rome lost ground, and great numbers of people of all ranks expressed an aversion to the Papal yoke. This occasioned violent and dangerous commotions in the kingdom of Naples in the year 1546; which, however, were at last quelled by the united efforts of Charles V. and his viceroy Don Pedro di Toledo. In several places the pope put a stop to the progress of the reformation, by letting loose the inquisitors; who spread dreadful marks of their barbarity through the greatest part of Italy. These formidable ministers of superstition put so many to death, and perpetrated such horrid acts of cruelty and oppression, that most of the reformed consulted their safety by a voluntary exile, while others returned to the religion of Rome, at least in external appearance. But the inquisition, which frighted into the profession of Popery several Protestants in other parts of Italy, could never make its way into the kingdom of Naples; nor could either the authority or intreaties of the pope engage the Neapolitans to admit even visiting inquisitors.

39 In Spain.

In Spain, several people embraced the Protestant religion, not only from the controversies of Luther, but even from those divines whom Charles V. had brought with him into Germany in order to refute the doctrines of Luther. For these doctors imbibed the pretended heresy instead of refuting it, and propagated it more or less on their return home. But the inquisition, which could obtain no footing in Naples, reigned triumphant in Spain, and by the most dreadful methods frightened the people back into Popery, and suppressed the desire of exchanging their superstition for a more rational plan of religion. It was indeed presumed that Charles himself died a protestant; and it seems to be certain, that, when the approach of death had dissipated those schemes of ambition and grandeur which had so long blinded him, his sentiments became much more rational and agreeable to Christianity than they had ever been. All the ecclesiastics who had attended him, as soon as he expired, were sent to the inquisition, and committed to the flames, or put to death by some other method equally terrible. Such was the fate of Augustine Casal, the emperor's preacher; of Constantine Pontius, his confessor; of Egidius, whom he had named to the bishopric of Tortosa; of Bartholomew de Caranza, a Dominican, who had been confessor to King Philip and Queen Mary; with 20 others of less note.

40 In England.

In England, the principles of the reformation began to be adopted as soon as an account of Luther's doctrines could be conveyed thither. In that kingdom there were still great remains of the sect called *Lollards*, whose doctrine resembled that of Luther; and among whom, of consequence, the sentiments of our reformer gained great credit. Henry VIII. king of England at that time was a violent partisan of the church of Rome, and had a particular veneration for the writings of Thomas Aquinas. Being informed that Luther spoke of his favourite author with contempt, he conceived a violent prejudice against the reformer, and even wrote against him, as we have already observed. Luther did not hesitate at writing against his majesty, overcame him in argument, and treated him with very little ceremony. The first step towards public reformation, however, was not taken till the year 1529. Great complaints had been made in England, and of a very ancient date, of the usurpations of the clergy; and by the prevalence of the Lutheran opinions, these complaints were now become more general than before. The House of Commons, finding the occasion favourable, passed several bills, restraining the impositions of the clergy: but what threatened the ecclesiastical order with the greatest danger were the severe reproaches thrown out almost without opposition in the house against the dissolute lives, ambition, and avarice of the priests, and their continual encroachments on the privileges of the laity. The bills for regulating the clergy met with opposition in the House of Lords; and bishop Fisher imputed them to want of faith in the Commons, and to a formed design, proceeding from heretical and Lutheran principles, of robbing the church of her patrimony, and overturning the national religion. The Commons, however, complained

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ed to the king, by their ſpeaker Sir Thomas Audley, of theſe reflections thrown out againſt them; and the biſhop was obliged to retract his words.

Though Henry had not the leaſt idea of rejecting any, even of the moſt abſurd Romiſh ſuperſtitions, yet as the oppreſſions of the clergy ſuited very ill with the violence of his own temper, he was pleaſed with every opportunity of leſſening their power. In the parliament of 1531, he ſhowed his deſign of humbling the clergy in the moſt effectual manner. An obſolete ſtatute was revived, from which it was pretended that it was criminal to ſubmit to the legatine power which had been exerciſed by cardinal Wolſey. By this ſtroke the whole body of clergy was declared guilty at once. They were too well acquainted with Henry's diſpoſition, however, to reply, that their ruin would have been the certain conſequence of their not ſubmitting to Wolſey's commiſſion which had been given by royal authority. Inſtead of making any defence of this kind, they choſe to throw themſelves on the mercy of their ſovereign; which, however, it coſt them 118,840l. to procure. A confeſſion was likewiſe extorted from them, that the king was protector and ſupreme head of the church of England; though ſome of them had the dexterity to get a clauſe inſerted, which invalidated the whole ſubmiſſion, viz. *in ſo far as is permitted by the law of Chriſt.*

The king, having thus begun to reduce the power of the clergy, kept no bounds with them afterwards. He did not indeed attempt any reformation in religious matters; nay, he perſecuted moſt violently ſuch as did attempt this in the leaſt. Indeed, the moſt eſſential article of his creed ſeems to have been his own ſupremacy; for whoever denied this, was ſure to ſuffer the moſt ſevere penalties, whether Proteſtant or Papiſt. But an account of the abſurd and cruel conduct of this prince, and of his final quarrel with the pope on account of his refuſing a diſpenſation to marry Anne Boleyn, is given under the article ENGLAND, n° 253—292.

He died in 1547, and was ſucceeded by his only ſon Edward VI. This amiable prince, whoſe early youth was crowned with that wiſdom, ſagacity, and virtue, that would have done honour to advanced years, gave new ſpirit and vigour to the Proteſtant cauſe, and was its brighteſt ornament, as well as its moſt effectual ſupport. He encouraged learned and pious men of foreign countries to ſettle in England, and addreſſed a particular invitation to Martin Bucer and Paul Fagius, whoſe moderation added a luſtre to their other virtues, that, by the miniſtry and labours of theſe eminent men, in concert with thoſe of the friends of the Reformation in England, he might purge his dominions from the ſordid fictions of popery, and eſtabliſh the pure doctrines of Chriſtianity in their place. For this purpoſe, he iſſued out the wiſeſt orders for the reſtoration of true religion; but his reign was too ſhort to accompliſh fully ſuch a glorious purpoſe. In the year 1553, he was taken from his loving and afflicted ſubjects, whoſe ſorrow was inexpreſſible, and ſuited to their loſs. His ſiſter Mary (the daughter of Catharine of Arragon, from whom Henry had been ſeparated by the famous divorce), a furious bigot to the church of Rome, and a princeſs whoſe natural character, like the ſpirit of her religion, was deſpotic and cruel, ſucceeded him on the Britiſh throne, and impoſed anew the arbitrary laws and the tyrannical yoke of Rome upon the people of England. Nor were the methods ſhe employed in the cauſe of ſuperſtition better than the cauſe itſelf, or tempered by any ſentiments of equity or compaſſion. Barbarous tortures and death, in the moſt ſhocking forms, awaited thoſe who oppoſed her will, or made the leaſt ſtand againſt the reſtoration of Popery. And among many other victims, the learned and pious Cranmer, archbiſhop of Canterbury, who had been one of the moſt illuſtrious inſtruments of the Reformation in England, fell a ſacrifice to her fury. This odious ſcene of perſecution was happily concluded in the year 1558, by the death of the queen, who left no iſſue; and, as ſoon as her ſucceſſor the lady Elizabeth aſcended the throne, all things aſſumed a new and a pleaſing aſpect. This illuſtrious princeſs, whoſe ſentiments, counſels, and projects, breathed a ſpirit ſuperior to the natural ſoftneſs and delicacy of her ſex, exerted this vigorous and manly ſpirit in the defence of oppreſſed conſcience and expiring liberty, broke anew the deſpotic yoke of Papal authority and ſuperſtition, and, delivering her people from the bondage of Rome, eſtabliſhed that form of religious doctrine and eccleſiaſtical government which ſtill ſubſiſts in England. This religious eſtabliſhment differs, in ſome reſpects, from the plan that had been formed by thoſe whom Edward VI. had employed for promoting the cauſe of the Reformation, and approaches nearer to the rites and diſcipline in former times; though it is widely different, and, in the moſt important points, entirely oppoſite to the principles of the Roman hierarchy. See ENGLAND, n° 293, &c.

41 In Ireland.

The cauſe of the reformation underwent in Ireland the ſame viciſſitudes and revolutions that had attended it in England. When Henry VIII. after the abolition of the Papal authority, was declared ſupreme head upon earth of the church of England, George Brown, a native of England, and a monk of the Auguſtine order, whom that monarch had created, in the year 1535, archbiſhop of Dublin, began to act with the utmoſt vigour in conſequence of this change in the hierarchy. He purged the churches of his dioceſe from ſuperſtition in all its various forms, pulled down images, deſtroyed relics, aboliſhed abſurd and idolatrous rites, and, by the influence as well as authority he had in Ireland, cauſed the king's ſupremacy to be acknowledged in that nation. Henry ſhowed, ſoon after, that this ſupremacy was not a vain title; for he baniſhed the monks out of that kingdom, confiſcated their revenues, and deſtroyed their convents. In the reign of Edward VI. ſtill farther progreſs was made in the removal of Popiſh ſuperſtitions, by the zealous labours of biſhop Brown, and the auſpicious encouragement he granted to all who exerted themſelves in the cauſe of the Reformation. But the death of this excellent prince, and the acceſſion of queen Mary, had like to have changed the face of affairs in Ireland as much as in England; but her deſigns were diſappointed by a very curious adventure, of which the following account has been copied from the papers of Richard earl of Corke.

42 Curious diſappointment of a Popiſh doctor in Ireland.

"Queen Mary having dealt ſeverely with the Proteſtants in England, about the latter end of her reign ſigned a commiſſion for to take the ſame courſe with them in Ireland; and to execute the ſame with greater force, ſhe nominates Dr Cole one of the commiſſioners. This Doctor coming, with the commiſſion, to Cheſter

on his journey, the mayor of that city hearing that her majesty was sending a messenger into Ireland, and he being a churchman, waited on the Doctor, who in discourse with the mayor taketh out of a cloke bag a leather box, saying unto him, [illegible] that [illegible] Ireland, calling the Protestants by that title. The good woman of the house being well affected to the Protestant religion, and also having a brother named *John Edmonds* of the same, then a citizen in Dublin, was much troubled at the Doctor's [illegible]; but watching her convenient time while the [illegible] took his leave, and the Doctor complimented [illegible] the [illegible], she opens the box, takes the commission out, and places in lieu thereof a sheet of paper [illegible] a pack of cards wrapt up therein, the knave of [illegible] uppermost. The doctor coming up [illegible] nothing of what had been [illegible] as formerly. The next day going to the water-side, wind and weather serving him, he [illegible] Ireland and landed on the 7th of October 1558 at Dublin. Then coming to the castle, the Lord Fitz-Walters being lord-deputy, sent for him to come before him and the privy-council; who, coming in, after he had made a speech relating upon what account he came over, he presents the box unto the lord-deputy; who causing it to be opened, that the secretary might read the commission, there was nothing save a pack of cards with the knave of clubs uppermost; which not only startled the lord-deputy and council, but the Doctor, who assured them he had a commission, but knew not how it was gone. Then the lord-deputy made answer: Let us have another commission, and we shall shuffle the cards in the meanwhile. The Doctor being troubled in his mind, went away, and returned into England, and coming to the court obtained another commission; but staying for a wind on the water-side, news came to him that the queen was dead: and thus God preserved the Protestants of Ireland." Queen Elizabeth was so delighted with this story, which was related to her by lord Fitz-Walter on his return to England, that she sent for Elizabeth Edmonds, whose husband's name was *Mattershad*, and gave her a pension of 40 l. during her life.

In Scotland, the seeds of reformation were very early sown, by several noblemen who had resided in Germany during the religious disputes there. But for many years it was suppressed by the power of the pope, seconded by inhuman laws and barbarous executions. The most eminent opposer of the Papal Jurisdiction was John Knox, a disciple of Calvin, a man of great zeal and invincible fortitude. On all occasions he raised the drooping spirits of the reformers, and encouraged them to go on with their work notwithstanding the opposition and treachery of the queen-regent; till at last, in 1561, by the assistance of an English army sent by Elizabeth, Popery was in a manner totally extirpated throughout the kingdom. From this period the form of doctrine, worship, and discipline established by Calvin at Geveva, has had the ascendancy in Scotland. But for an account of the difficulties which the Scottish reformers had to struggle with, and the manner in which these were overcome, &c. see SCOTLAND.

For further information on the subject of the reformation in general, we refer our readers to the works of Burnet and Brandt, to Beausobre's *Histoire de la Reformation dans l'Empire, et les Etats de la Confession d'Augsbourg depuis* 1517—1530, in 4 vols 8vo, Berlin 17[illegible], and Mosheim's Ecclesiastical History. See also Sleidan *De Statu Religionis & Republicæ Carolo V.*; *Caesaris Commentarii*; and father Paul's history of the Council of Trent.

Refraction || Refuge.

REFRACTION, in general, is the deviation of a moving body from its direct course, occasioned by the different density of the medium in which it moves; or it is a change of direction occasioned by a body's falling obliquely out of one medium into another. The word is chiefly made use of with regard to the rays of light. See OPTICS (*Index*) at *Refraction*.

REFRANGIBILITY OF LIGHT, the disposition of rays to be refracted. The term is chiefly applied to the disposition of rays to produce different colours, according to their different degrees of refrangibility. See CHROMATICS and OPTICS *passim*.

REFRIGERATIVE, in medicine, a remedy which refreshes the inward parts by cooling them; as clysters, ptisans, &c.

REFRIGERATORY, in chemistry, a vessel filled with cold water, through which the worm passes in distillation; the use of which is to condense the vapours as they pass through the worm.

CITIES OF REFUGE, were places provided as *Asyla*, for such as against their will should happen to kill a man. Of these cities there were three on each side Jordan: on this side were Kedesh of Naphtali, Hebron, and Schechem; beyond Jordan were Bezer, Golan, and Ramoth-Gilead. When any of the Hebrews, or strangers that dwelt in their country, happened to spill the blood of a man, they might retire thither to be out of the reach of the violent attempts of the relations of the deceased, and to prepare for their defence and justification before the judges. The manslayer underwent two trials: first before the judges of the city of refuge to which he had fled; and secondly before the judges of his own city. If found guilty, he was put to death with all the severity of the law. If he was acquitted, he was not immediately set at liberty; but, to inspire a degree of horror against even involuntary homicide, he was reconducted to the place of refuge, and obliged to continue there in a sort of banishment till the death of the high-priest. If, before this time, he ventured out, the revenger of blood might freely kill him; but after the high-priest's death he was at liberty to go where he pleased without molestation. It was necessary that the person who fled to any of the cities of refuge should understand some trade or calling that he might not be burthensome to the inhabitants. The cities of refuge were required to be well supplied with water and necessary provisions. They were also to be of easy access to have good roads leading to them, with commodious bridges where there was occasion. The width of the roads was to be 32 cubits or 48 feet at least. It was further required, that at all cross-ways direction-posts should be erected, with an inscription pointing out the road to the cities of refuge. The 15th of Adar, which answers to our February moon, was appointed for the city magistrates to see that the roads were in good condition. No person in any of these cities was allowed to make weapons, lest the relations of the deceased should be furnished with the means of gratifying their revenge. Deut. xix. 3. iv. 41. 43.; Josh. xx. 7. Three other cities of refuge were conditionally promised, but never granted. See ASYLUM.

REGU-

Refugees || Regata.

REFUGEES, a term at firſt applied to the French Proteſtants, who, by the revocation of the edict of Nantz, were conſtrained to fly from perſecution, and take refuge in foreign countries. Since that time, however, it has been extended to all ſuch as leave their country in times of danger or diſtreſs; and hence, ſince the American Revolution, the Engliſh frequently heard of *American refugees*.

REGALE, a magnificent entertainment or treat, given to ambaſſadors and other perſons of diſtinction, to entertain or do them honour.

It is uſual in Italy, at the arrival of a traveller of eminence, to ſend him a regale, that is, a preſent of ſweetmeats, fruits, &c. by way of refreſhment.

REGALIA, in law, the rights and prerogatives of a king. See PREROGATIVE.

Regalia is alſo uſed for the apparatus of a coronation; as the crown, the ſceptre with the croſs, that with the dove, St Edward's ſtaff, the globe, and the orb with the croſs, four ſeveral ſwords, &c.—The regalia of Scotland were depoſited in the caſtle of Edinburgh in the year 1707, in what is called the *Jewel Office*. This room was lately opened by ſome commiſſioners appointed by the king, when the large cheſt in which it is ſuppoſed they were placed was found; but as it has not, that we have heard of, been opened, it is impoſſible to ſay whether they be there or not. It is very generally thought they were carried to the Tower of London in the reign of Queen Anne; and a crown is there ſhewn which is called the Scotch crown. We do not believe, however, that that is the real crown of Scotland; and think it probable that the Scotch regalia are in the cheſt which was lately found. If they are not there, they muſt have been taken away by ſtealth, and either deſtroyed or melted down, for we do not believe that they are in the Tower of London.

LORD *of* REGALITY, in Scots law. See LAW, n° clviii. 4.

COURT *of* REGARD. See *FOREST-Courts*.

REGARDANT, in heraldry, ſignifies looking behind; and it is uſed for a lion, or other beaſt, with his face turned towards his tail.

REGARDER, an ancient officer of the king's foreſt, ſworn to make the regard of the foreſt every year; that is, to take a view of its limits, to inquire into all offences and defaults committed by the foreſters within the foreſt, and to obſerve whether all the officers executed their reſpective duties. See *FOREST-Laws*.

REGATA, or REGATTA, a ſpecies of amuſement peculiar to the republic of Venice. This ſpectacle has the power of exciting the greateſt emotions of the heart, admiration, enthuſiaſm, and ſenſe of glory, and the whole train of our beſt feelings. The grand regata is only exhibited on particular occaſions, as the viſits of foreign princes and kings at Venice.

It is difficult to give a juſt idea of the ardour that the notice of a *regata* ſpreads among all claſſes of the inhabitants of Venice. Proud of the excluſive privilege of giving ſuch a ſpectacle, through the wonderful local circumſtances of their city, they are highly delighted with making preparations a long time before, in order to contribute all they can towards the perfection and enjoyment of the ſpectacle. A thouſand intereſts are formed and augmented every day; parties in favour of the different competitors who are known; the protection of young noblemen given to the gondoliers in their ſervice; the deſire of honours and rewards in the aſpirants; and, in the midſt of all this, that ingenious national induſtry, which awakes the Venetians from their habitual indolence, to derive advantage from the buſineſs and agitation of the moment: all theſe circumſtances united give to the numerous inhabitants of this lively city a degree of ſpirit and animation which render it during that time a delightful abode in the eyes of the philoſopher and the ſtranger. Crowds of people flock from the adjacent parts, and travellers joyfully repair to this ſcene of gaiety and pleaſure. Regata.

Although it is allowable for any man to go and inſcribe his name in the liſt of combatants until the fixed number is complete, it will not be amiſs to remark one thing, which has relation to more antient times. The ſtate of a gondolier* is of much conſideration among the people; which is very natural, that having been the primitive condition of the inhabitants of this country. But, beſides this general conſideration, there are among them ſome families truly diſtinguiſhed and reſpected by their equals, whoſe antiquity is acknowledged, and who, on account of a ſucceſſion of virtuous men, able in their profeſſion, and honoured for the prizes they have carried off in theſe conteſts, form the body of noble gondoliers; often more worthy of that title than the higher order of nobility, who only derive their honours from the merit of their anceſtors, or from their own riches. The conſideration for thoſe families is carried ſo far, that, in the diſputes frequently ariſing among the gondoliers in their ordinary paſſage of the canals, we ſometimes ſee a quarrel inſtantly made up by the ſimple interpoſition of a third perſon, who has chanced to be of this reverend body. They are rigid with reſpect to miſalliances in their families, and they endeavour reciprocally to give and take their wives among thoſe of their own rank. But we muſt remark here, with pleaſure, that theſe diſtinctions infer no inequality of condition, nor admit any oppreſſion of inferiors, being founded ſolely on laudable and virtuous opinions. Diſtinctions derived from fortune only, are thoſe which always outrage nature, and often virtue.

* See Gondola.

In general, the competitors at the great regatas are choſen from among theſe families of reputation. As ſoon as they are fixed upon for this exploit, they ſpend the intermediate time in preparing themſelves for it, by a daily aſſiduous and fatiguing exerciſe. If they are in ſervice, their maſters during that time not only give them their liberty, but alſo augment their wages. This cuſtom would ſeem to indicate, that they look upon them as perſons conſecrated to the honour of the nation, and under a ſort of obligation to contribute to its glory.

At laſt the great day arrives. Their relations aſſemble together: they encourage the heroes, by calling to their minds the records of their families; the women preſent the oar, beſeeching them, in an epic tone, to remember that they are the ſons of famous men, whoſe ſteps they will be expected to follow: this they do with as much ſolemnity as the Spartan women preſented the ſhield to their ſons, bidding them either return with or upon it. Religion, as practiſed among the lower claſs of people, has its ſhare in the preparations for this enterprize. They cauſe maſſes to be ſaid; they make vows to ſome particular church; and they arm their boats for the conteſt with the images of thoſe ſaints who are moſt in vogue. Sorcerers are not forgotten

[illegible] Per gondolieri who have loſt the [illegible] declare, that witchcraft had been practiſed [illegible] them, or certainly they muſt have won the day. Such a ſuppoſition prevents a poor fellow from thinking ill of himſelf; an opinion that might be unfavourable to him another time.

The courſe is about four miles. The boats ſtart from a certain place, run through the great winding canal, which divides the town into two parts, turn round a packet, and, coming back the ſame way, go and ſeize the prize, which is fixed at the acuteſt angle of the great canal, on the convex ſide, ſo that the point of ſight may be the more extended, and the prize ſeized in the ſight of the ſpectators on both ſides.

According to the number of competitors, different races are performed in different ſorts of boats; ſome with one oar and others with two. The prizes propoſed are four, indicated by four flags of different colours, with the different value of the prizes marked upon them.—Theſe flags, public and glorious monuments, are the prizes to which the competitors particularly aſpire. But the government always adds to each a genteel ſum of money; beſides that the conquerors, immediately after the victory, are ſurrounded by all the *beau monde*, who congratulate and make them preſents; after which they go, bearing their honourable trophy in their hand, down the whole length of the canal, and receive the applauſe of innumerable ſpectators.

This grand canal, ever ſtriking by the ſingularity and beauty of the buildings which border it, is, upon theſe occaſions, covered with an infinity of ſpectators, in all ſorts of barges, boats, and gondolas. The element on which they move is ſcarcely ſeen; but the noiſe of oars, the agitation of arms and bodies in perpetual motion, indicate the ſpectacle to be upon the water. At certain diſtances, on each ſide of the ſhore, are erected little amphitheatres and ſcaffoldings, where are placed bands of muſic; the harmonious ſound of which predominates now and then over the buzzing noiſe of the people. Some days before a *regata*, one may ſee on the great canal many boats for pleaſure and entertainment. The young noble, the citizen, the rich artizan, mounts a long boat of ſix or eight oars; his gondoliers decorated with rich and ſingular dreſſes, and the veſſel itſelf adorned with various ſtuffs. Among the nobles there are always a number who are at a conſiderable expence in theſe decorations; and at the *regata* itſelf exhibit on the water perſonages of mythologic ſtory, with the heroes of antiquity in their train, or amuſe themſelves with repreſenting the coſtumi of different nations: in ſhort, people contribute with a mad ſort of magnificence, from all quarters, to this maſquerade, the favourite diverſion of the Venetians. But theſe great machines, not being the leſs in motion on account of their ornaments, are not merely deſtined to grace the ſhow: they are employed at the regata, at every moment, to range the people, to protect the courſe, and to keep the avenue open and clear to the goal. The nobility, kneeling upon cuſhions at the prow of their veſſels, are attentive to theſe matters, and announce their orders to the moſt reſtive, by darting at them little gilded or ſilvered balls, by means of certain bows, with which they are furniſhed on this occaſion. And this is the only appearance of coertion in the Venetian police on theſe days of the greateſt tumult: nor is there to be ſeen, in any part of the city, a body of guards or patrol, nor even a gun or a halbert. The manners of the nation, its gaiety, its education in the habit of believing that the government is ever awake, that it knows and ſees every thing; its reſpectful attachment to the body of patricians; the ſole aſpect of certain officers of the police in their robes, diſperſed in different places, at once operate and explain that tranquility, that ſecurity, which we ſee in the midſt of the greateſt confuſion, and that ſurpriſing docility in ſo lively and fiery a people. Regattas have been attempted on the river Thames, but they were but humble imitations of the Venetian amuſement.

REGEL, or RIGEL, a fixed ſtar of the firſt magnitude, in Orion's left foot.

REGENERATION, in theology, the act of being born again by a ſpiritual birth, or the change of heart and life experienced by a perſon who forſakes a courſe of vice, and ſincerely embraces a life of virtue and piety.

REGENSBURG, or RATISBON. See RATISBON.

REGENT, one who governs a kingdom during the minority or abſence of the king.

In France, the queen-mother had the regency of the kingdom during the minority of the king, under the title of *queen-regent*.

In England, the methods of appointing this guardian or regent have been ſo various, and the duration of his power ſo uncertain, that from hence alone it may be collected that his office is unknown to the common law; and therefore (as Sir Edward Coke ſays, 4 Inſt. 58.) the ſureſt way is to have him made by authority of the great council in parliament. The earl of Pembroke by his own authority aſſumed in very troubleſome times the regency of Henry III. who was then only nine years old; but was declared of full age by the pope at 17, confirmed the great charter at 18, and took upon him the adminiſtration of the government at 20. A guardian and councils of regency were named for Edward III. by the parliament, which depoſed his father; the young king being then 15, and not aſſuming the government till three years after. When Richard II. ſucceeded at the age of 11, the duke of Lancaſter took upon him the management of the kingdom till the parliament met, which appointed a nominal council to aſſiſt him. Henry V. on his death-bed named a regent and a guardian for his infant ſon Henry VI. then nine months old: but the parliament altered his diſpoſition, and appointed a protector and council, with a ſpecial limited authority. Both theſe princes remained in a ſtate of pupilage till the age of 23. Edward V. at the age of 13, was recommended by his father to the care of the duke of Glouceſter; who was declared protector by the privy-council. The ſtatutes 25 Hen. VIII. c. 12. and 28 Hen. VIII. c. 7. provided, that the ſucceſſor, if a male and under 18, or if a female and under 16, ſhould be till ſuch age in the governance of his or her natural mother, (if approved by the king), and ſuch other counſellors as his majeſty ſhould by will or otherwiſe appoint: and he accordingly appointed his 16 executors to have the government of his ſon Edward VI. and the kingdom, which executers elected the earl of Hartford protector. The ſtatutes 24 Geo. II. c. 24. in caſe the crown ſhould deſcend to any of the children of Frederic late prince of Wales under the age of 18, appointed the princeſs dowager;—and that of 5 Geo. III. c. 27. in caſe of a like deſcent to any of his preſent majeſty's children, empowers the king to name either the

queen

Regent, Reggio.

queen or princeſs dowager, or any deſcendant of king George II. reſiding in England;—to be guardian and regent till the ſucceſſor attains ſuch age, aſſiſted by a council of regency; the powers of them all being expreſsly defined and ſet down in the ſeveral acts.

REGENT alſo ſignifies a profeſſor of arts and ſciences in a college, having pupils under his care; but it is generally reſtrained to the lower claſſes, as to rhetoric, logic, &c. thoſe of philoſophy being called *profeſſors*. In the Engliſh univerſities it is applied to Maſters of Arts under five years ſtanding, and to Doctors under two, as non-regent is to thoſe above that ſtanding.

Swinburne's Travels in the Two Sicilies.

REGGIO, an ancient and conſiderable town of Italy, in the kingdom of Naples, and in the Farther Calabria, with an archbiſhop's ſee, and a woollen manufactory. It is ſeated in a delightful country, which produces plenty of oranges, and all their kindred fruits. The olives are exquiſite, and high-flavoured. The town, however, can boaſt of neither beautiful buildings nor ſtrong fortifications. Of its edifices the Gothic cathedral is the only ſtriking one, but it affords nothing curious in architecture. The citadel is far from formidable, according to the preſent ſyſtem of tactics; nor could the city walls make a long reſiſtance againſt any enemy but Barbary corſairs; and even theſe they have not always been able to repel, for in 1543 it was laid in aſhes by Barbaroſſa. Muſtapha ſacked it 15 years after, and the deſolation was renewed in 1593 by another ſet of Turks. Its expoſed ſituation, on the very threſhold of Italy, and fronting Sicily, has from the earlieſt period rendered it liable to attacks and devaſtations. The Chalcidians ſeized upon it, or, according to the uſual Greek phraſe, founded it, and called the colony *Rhegion*, from a word that means a break or crack, alluding to its poſition on the point where Sicily broke off from the continent. Anaxilas oppreſſed its liberties. Dionyſius the Elder took it, and put many of the principal citizens to death, in revenge for their having refuſed his alliance. The Campanian legion, ſent to protect the Rhegians, turned its ſword againſt them, maſſacred many inhabitants, and tyrannized over the remainder, till the Roman ſenate thought proper to puniſh theſe traitors with exemplary ſeverity, though at the ſame time it entered into league with the revolved garriſon of Meſſina. This union with a ſet of villains, guilty of the ſame crime, proved that no love of juſtice, but political reaſons alone, drew down its vengeance on the Campanians.—It is about 12 miles S. E. of Meſſina, and 190 S. by E. of Naples. E. Long. 16. 0. N. Lat. 38. 4.

REGGIO, an ancient, handſome, and ſtrong town of Italy, in the duchy of Modena, with a ſtrong citadel, and a biſhop's ſee. It has been ruined ſeveral times by the Goths, and other nations. In the cathedral are paintings by the greateſt maſters; and in the ſquare is the ſtatue of Brennus, chief of the Gauls. The inhabitants are about 22,000, who carry on a great trade in ſilk. It was taken by prince Eugene in 1706, and by the king of Sardinia in 1742. It is ſeated in a fertile country to the ſouth of the Apennines, and to the north of a ſpacious plain, 15 miles north-weſt of Modena, and 80 ſouth-eaſt of Milan. E. Long. 11. 5. N. Lat. 44. 43. —The duchy of this name is bounded on the weſt by that of Modena, and produces a great deal of ſilk, and belongs to the duke of Modena, except the marquiſate of St Martin, which belongs to a prince of that name.

Regiam ‖ Regimen.

REGIAM MAJESTATEM. See LAW, n° clv. 3.

REGICIDE, KING-KILLER, a word chiefly uſed in England in ſpeaking of the perſons concerned in the trial, condemnation, and execution, of king Charles I.

REGIFUGIUM was a feaſt celebrated at Rome on the 24th of February, in commemoration of the expulſion of *Tarquinius Superbus*, and the abolition of regal power. It was alſo performed on the 26th of May, when the king of the ſacrifices, or *Rex Sacrorum*, offered bean flour and bacon, in the place where the aſſemblies were held. The ſacrifice being over, the people haſted away with all ſpeed, to denote the precipitate flight of King Tarquin.

REGIMEN, the regulation of diet, and, in a more general ſenſe, of all the non-naturals, with a view to preſerve or reſtore health. See ABSTINENCE, ALIMENT, FOOD, DIET, DRINK, and MEDICINE.

The viciſſitude of exerciſe and reſt forms alſo a neceſſary part of regimen. See EXERCISE.

It is beneficial to be at reſt now and then, but more ſo frequently to uſe exerciſe; becauſe inaction renders the body weak and liſtleſs, and labour ſtrengthens it. But a medium is to be obſerved in all things, and too much fatigue is to be avoided: for frequent and violent exerciſe overpowers the natural ſtrength, and waſtes the body; but moderate exerciſe ought always to be uſed before meals. Now, of all kinds of exerciſe, riding on horſeback is the moſt convenient: or if the perſon be too weak to bear it, riding in a coach, or at leaſt in a litter: next follow fencing, playing at ball, running, walking. But it is one of the inconveniences of old age, that there is ſeldom ſufficient ſtrength for uſing bodily exerciſe, though it be extremely requiſite for health: wherefore frictions with the fleſh-bruſh are neceſſary at this time of life; which ſhould be performed by the perſon himſelf, if poſſible; if not, by his ſervants.

Sleep is the ſweet ſoother of cares, and reſtorer of ſtrength; as it repairs and replaces the waſtes that are made by the labours and exerciſes of the day. But exceſſive ſleep has its inconveniences; for it blunts the ſenſes, and renders them leſs fit for the duties of life. The proper time for ſleep is the night, when darkneſs and ſilence invite and bring it on: day-ſleep is leſs refreſhing; which rule if it be proper for the multitude to obſerve, much more is the obſervance of it neceſſary for perſons addicted to literary ſtudies, whoſe minds and bodies are more ſuſceptible of injuries.

REGIMEN, in grammar, that part of ſyntax, or conſtruction, which regulates the dependency of words, and the alterations which one occaſions in another.

REGIMEN for Seamen. See SEAMEN.

REGIMENT, is a body of men, either horſe, foot, or artillery, commanded by a colonel, lieutenant-colonel, and major. Each regiment of foot is divided into companies; but the number of companies differs: though in Britain the regiments are generally 10 companies, one of which is always grenadiers, excluſive of the two independent companies. Regiments of horſe are commonly ſix troops, but there are ſome of nine. Dragoon regiments are generally in war-time 8 troops, and in time of peace but 6. Each regiment has a chaplain, quarter-maſter, adjutant, and ſurgeon. Some German regiments conſiſt of 2000 foot; and the regiment of Picardy in France conſiſted of 6000, being 120 companies, of 50 men in each company.

Regis-

[illegible] were first formed in France in the year [illegible], and in England in the year 1660.

[illegible]. See MULLER.

REGION, in geography, a large extent of land, inhabited by many people of the same nation, and inclosed within certain limits or bounds.

The [illegible] astronomers divide the moon into several regions, or large tracts of land, to each of which they give its proper name.

REGION, in physiology, is taken for a division of our atmosphere, which is divided into the upper, middle, and lower regions.

The upper region commences from the tops of the mountains, and reaches to the utmost limits of the atmosphere. In this region reign a perpetual, equable, calmness, clearness, and serenity. The middle region is that in which the clouds reside, and where meteors are formed, extending from the extremity of the lowest to the tops of the highest mountains. The lowest region is that in which we breathe, which is bounded by the reflection of the sun's rays; or by the height to which they rebound from the earth. See ATMOSPHERE and AIR.

Æthereal Region, in cosmography, is the whole extent of the universe, in which is included all the heavenly bodies, and even the orb of the fixed stars.

Elementary Region, according to the Aristotelians, is a sphere terminated by the concavity of the moon's orb, comprehending the atmosphere of the earth.

REGION, in anatomy a division of the human body, otherwise called *cavity*, of which anatomists reckon three, viz. the upper region, or that of the head; the middle region, that of the thorax or breast; and the lower, the abdomen, or belly. See ANATOMY.

REGION, in ancient Rome, was a part or division of the city. The regions were only four in number, till Augustus Cæsar's time, who divided the city into fourteen; over each of which he settled two surveyors, called *curatores viarum*, who were appointed annually, and took their divisions by lot. These fourteen regions contained four hundred and twenty four streets, thirty-one of which were called *greater* or *royal streets*, which began at the gilt pillar that stood at the entry of the open place in the middle of the city. The extent of these divisions varied greatly, some being from 12000 or 13000 to 33000 feet or upwards in circumference. Authors, however, are not agreed as to the exact limits of each. The curatores viarum wore the purple, had each two lictors in their proper divisions, had slaves under them to take care of fires, that happened to break out. They had also two officers, called *denunciatores*, in each region to give account of any disorders. Four *vico-magistri* also were appointed in each street, who took care of the streets allotted them, and carried the orders of the city to each citizen.

REGISTER, a public book, in which are entered and recorded memoirs, acts, and minutes, to be had recourse to occasionally for knowing and proving matters of fact. Of these there are several kinds; as,

1. Register of deeds in Yorkshire and Middlesex, in which are registered all deeds, conveyances, wills, &c. that affect any lands or tenements in those counties, which are otherwise void against any subsequent purchasers or mortgagees, &c. but this does not extend to any copyhold estate, nor to leases at a rack-rent, or where they do not exceed 21 years. The registered memorials must be ingrossed on parchment, under the hand and seal of some of the granters or grantees, attested by witnesses who are to prove the signing or sealing of them and the execution of the deed. But these registers, which are confined to two counties, are in Scotland general, by which the laws of North Britain are rendered very easy and regular. Of these there are two kinds; the one general, fixed at Edinburgh, under the direction of the lord-register; and the other is kept in the several shires, stewartries, and regalities, the clerks of which are obliged to transmit the registers of their respective courts to the general register.

2. Parish-registers are books in which are registered the baptisms, marriages, and burials, of each parish.

REGISTERS were kept both at Athens and Rome, in which were inserted the names of such children as were to be brought up, as soon as they were born. Marcus Aurelius required all free persons to give in accounts of their children, within 30 days after the birth, to the treasurer of the empire, in order to their being deposited in the temple of Saturn, where the public acts were kept. Officers were also appointed as public registers in the provinces, that recourse might be had to their lists of names, for settling disputes, or proving any person's freedom.

REGISTER Ships, in commerce, are vessels which obtain a permission either from the king of Spain, or the council of the Indies, to traffic in the ports of the Spanish West Indies; which are thus called, from their being registered before they set sail from Cadiz for Buenos Ayres.

REGISTERS, in chemistry, are holes, or chinks with stopples, contrived in the sides of furnaces, to regulate the fire; that is, to make the heat more intense or remiss, by opening them to let in the air, or keeping them close to exclude it. There are also registers in the steam-engine. See *STEAM-Engine*.

REGISTRAR, an officer in the English universities, who has the keeping of all the public records.

REGIUM, LEGIUM *Lepidi*, *Regium Lepidum*, (anc. geog.); a town of Cisalpine Gaul, on the Via Æmilia so called from Æmilius Lepidus, who was consul with C. Flaminius; but whence it was surnamed *Regium* is altogether uncertain. Tacitus, relates, that at the battle of Bedriacum, a bird of an unusual size was seen perching in a famous grove near Regium Lepidum. Now called *Reggio*, a city of Modena. E. Long. 11. 0. N. Lat. 44. 45. See REGGIO.

REGNARD (John Francis), one of the best French comic writers after Moliere, was born at Paris in 1647. He had scarcely finished his studies, when an ardent passion for travelling carried him over the greatest part of Europe. When he settled in his own country, he was made a treasurer of France, and lieutenant of the waters and forests: he wrote a great many comedies; and, though naturally of a gay genius, died of chagrin in the 52d year of his age. His works, consisting of comedies and travels, were printed at Rouen, in 5 vols 12mo, 1732.

REGNIER (Mathurin), the first French poet who succeeded in satire, was born at Chartres in 1573. He was brought up to the church, a place for which his debaucheries rendered him very unsuitable; and these by his own confession were so excessive, that at 30 he had all

Registers || Regnier.

Regnum ‖ Regulbium.

all the infirmities of age. Yet he obtained a canonry in the church of Chartres, with other benefices; and died in 1613. There is a neat Elzevir edition of his works, 12mo, 1652, Leyden; but the moſt elegant is that with notes by M. Broſſette, 4to, 1729, London.

Regnier des Marets (Seraphin), a French poet, born at Paris in 1632. He diſtinguiſhed himſelf early by his poetical talents, and in 1684 was made perpetual ſecretary to the French academy on the death of Mezeray: it was he who drew up all thoſe papers in the name of the academy againſt Furetiere: the king gave him the priory of Grammont, and he had alſo an abbey. He died in 1713, and his works are, French, Italian, Spaniſh, and Latin poems, 2 vols; a French grammar; and an Italian tranſlation of Anacreon's odes, with ſome other tranſlations.

REGNUM (anc. geog.), a town of the Regni, a people in Britain, next the Cantii, now Surry, Suſſex, and the coaſt of Hampſhire, (Camden); a town ſituated, by the Itinerary numbers, on the confines of the Belgæ, in a place now called *Ringwood*, in Hampſhire, on the rivulet Avon, running down from Saliſbury, and about ten miles or more diſtant from the ſea.

REGRATOR, ſignifies him who buys and ſells any wares or victuals in the *ſame* market or fair: and regrators are particularly deſcribed to be thoſe who buy, or get into their hands, in fairs or markets, any grain, fiſh, butter, cheeſe, ſheep, lambs, calves, ſwine, pigs, geeſe, capons, hens, chickens, pigeons, conies, or other dead victuals whatſoever, brought to a fair or market to be ſold there, and do ſell the ſame again in the ſame fair, market, or place, or in ſome other within four miles thereof.

Regrating is a king of *huckſtry*, by which victuals are made dearer; for every ſeller will gain ſomething, which muſt of conſequence enhance the price. And, in ancient times, both the engroſſer and regrator were comprehended under the word *foreſtaller*. Regrators are puniſhable by loſs and forfeiture of goods, and impriſonment, according to the firſt, ſecond, or third offence, &c.

REGENSBERG, a handſome, though ſmall town of Swiſſerland, in the canton of Zurich, and capital of a bailiwick of the ſame name, with a ſtrong caſtle; ſeated on a hill, which is part of Mount Jura. There is a well ſunk through a rock, 36 fathoms deep.

REGULAR, denotes any thing that is agreeable to the rules of art: thus we ſay, a regular building, verb, &c.

A regular figure, in geometry, is one whoſe ſides, and conſequently angles, are equal; and a regular figure with three or four ſides is commonly termed an *equilateral triangle* or *ſquare*, as all others with more ſides are called *regular polygons*.

Regular, in a monaſtery, a perſon who has taken the vows; becauſe he is bound to obſerve the rules of the order he has embraced.

REGULATION, a rule or order preſcribed by a ſuperior, for the proper management of ſome affair.

REGULATOR *of a* Watch, the ſmall ſpring belonging to the balance; ſerving to adjuſt its motions, and make it go faſter or ſlower. See Watch.

REGULBIUM, or Regulvium. (Notitia Imperii); mentioned nowhere elſe more early: a town of the Cantii, in Britain. Now Reculver, a village on the coaſt, near the iſland Thanet, towards the Thames, to the north of Canterbury, (Camden). Regulus.

REGULUS (M. Attilius), a conſul during the firſt Punic war. He reduced Brundufium, and in his ſecond conſulſhip he took 64 and ſunk 30 galleys of the Carthaginian fleet, on the coaſts of Sicily. Afterwards he landed in Africa; and ſo rapid was his ſucceſs, that in a ſhort time he made himſelf maſter of about 200 places of conſequence on the coaſt. The Carthaginians ſued for peace, but the conqueror refuſed to grant it; and ſoon after he was defeated in a battle by Xantippus, and 30,000 of his men were left on the field of battle, and 15,000 taken priſoners. Regulus was in the number of the captives, and he was carried in triumph to Carthage. He was ſent by the enemy to Rome, to propoſe an accommodation and an exchange of priſoners; and if his commiſſion was unſucceſsful, he was bound by the moſt ſolemn oaths to return to Carthage without delay. When he came to Rome, Regulus diſſuaded his countrymen from accepting the terms which the enemy propoſed; and when his opinion had had due influence on the ſenate, Regulus retired to Carthage agreeable to his engagements. The Carthaginians were told that their offers of peace had been rejected at Rome by the means of Regulus; and therefore they prepared to puniſh him with the greateſt ſeverity. His eye-brows were cut, and he was expoſed for ſome days to the exceſſive heat of the meridian ſun, and afterwards confined in a barrel, whoſe ſides were everywhere filled with large iron ſpikes, till he died in the greateſt agonies. His ſufferings were heard of at Rome; and the ſenate permitted his widow to inflict whatever puniſhment ſhe pleaſed on ſome of the moſt illuſtrious captives of Carthage which were in their hands. She confined them alſo in preſſes filled with ſharp iron points; and was ſo exquiſite in her cruelty, that the ſenate interfered, and ſtopped the barbarity of her puniſhment. Regulus died about 251 years before Chriſt.—Memmius, a Roman, made governor of Greece by Caligula. While Regulus was in his province, the emperor wiſhed to bring the celebrated ſtatue of Jupiter Olympius by Phidias to Rome, but this was ſupernaturally prevented; and according to ancient authors, the ſhip which was to convey it was deſtroyed by lightning, and the workmen who attempted to remove the ſtatue were terrified away by ſudden noiſes.—A man who condemned Sejanus.—Roſcius, a man who held the conſulſhip but for one day, in the reign of Vitellius.

Regulus, in chemiſtry, an imperfect metallic ſubſtance that falls to the bottom of the crucible, in the melting of ores or impure metallic ſubſtances. It is the fineſt or pureſt part of the metal; and, according to the alchemiſts, is denominated *regulus*, or *little king*, as being the firſt-born of the royal metallic blood. According to them, it is really a ſon, but not a perfect man; *i. e.* not yet a perfect metal, for want of time and proper nouriſhment. To procure the regulus or mercurial parts of metals, &c. flux powders are commonly uſed; as nitre, tartar, &c. which purge the ſulphureous part adhering to the metal, by attracting and abſorbing it to themſelves.

Regulus of Antimony. See Chemistry, nº 1252—1257; and ſee *Index* there, at *Antimony*.

Regulus of Arſenic. See Chemistry, nº 1267, &c. and 1285—1294. The ancient proceſs for making regulus

[illegible] is mixed in unequal parts of arſenic [illegible] one part of ſoap, one part of ſuet, and one part of [illegible] of copper, and quickly pulling [illegible] the crucible. After the operation is finiſhed, a [illegible] will be found at the bottom of the crucible, of a white livid colour, and of conſiderable [illegible]. The iron and copper employed in this proceſs are not intended, as in the operation for the martial regulus of antimony, to precipitate the arſenic, and to ſeparate it from ſulphur or any other ſubſtance; for the white arſenic is pure, and nothing is to be taken from it; but, on the contrary, the inflammable principle is to be added to reduce it to a regulus. The true uſe of theſe metals in the preſent operation is to unite with the regulus of arſenic, to give it more body, and to prevent its entire diſſipation in vapours. Hence the addition of iron, while it procures theſe advantages, has the inconvenience of altering the purity of the regulus: for the metallic ſubſtance obtained is a regulus of arſenic alloyed with iron. It may, however, be purified from the iron by ſublimation in a cloſe veſſel; by which operation the reguliſed arſenical part, which is very volatile, is ſublimed to the top of the veſſel, and is ſeparated from the iron, which being of a fixed nature remains at the bottom. We are not, however, very certain, that in this kind of rectification the regulus of arſenic does not carry along with it a certain quantity of iron; for, in general, a volatile ſubſtance raiſes along with it, in ſublimation, a part of any fixed matter with which it happened to be united.

Mr Brandt propoſes another method, which we believe is preferable to that deſcribed. He directs that white arſenic ſhould be mixed with ſoap. Inſtead of the ſoap, olive-oil may be uſed, which has been found to ſucceed well. The mixture is to be put into a retort or glaſs matraſs, and to be diſtilled or ſublimed with fire, at firſt very moderate, and only ſufficient to raiſe the oil. As the oils, which are not volatile, cannot be diſtilled but by a heat ſufficient to burn and decompoſe them, the oil therefore which is mixed with the arſenic undergoes theſe alterations, and after having penetrated the arſenic thoroughly is reduced to a coal. When no more oily vapours riſe, we may then know that the oil is reduced to coal. Then the fire muſt be increaſed, and the metalliſed arſenic will be ſoon ſublimed to the upper part of the veſſel, in the inſide of which it will form a metallic cruſt. When no more ſublimes, the veſſel is to be broken, and the adhering cruſt of regulus of arſenic is to be ſeparated. The regulus obtained by this firſt operation is not generally perfect, or not entirely ſo, as a part of it is always overcharged with fuliginous matter, and another part has not enough of phlogiſton; which latter part adheres to the inner ſurface of the cruſt, and forms grey or brown cryſtals. This ſublimate muſt then be mixed with a leſs quantity of oil, and ſublimed a ſecond time like the firſt; and even, to obtain as good regulus as may be made, a third ſublimation in a cloſe veſſel, and without oil, is neceſſary. During this operation, the oil which riſes is more fetid than any other empyreumatic oil, and is almoſt inſupportable. This ſmell certainly proceeds from the arſenic; the ſmell of which is exceedingly ſtrong and diſagreeable when heated.

Regulus of arſenic made by the method we have deſcribed, and which we conſider as the only one which is pure, has all the properties of a ſemimetal. It has metallic gravity, opacity, and luſtre. Its colour is white and livid, it tarniſhes in the air, is very brittle, but much more volatile than any other ſemimetal. It eaſily loſes its inflammable principle, when ſublimed in veſſels into which the air has acceſs; the ſublimate having the appearance of grey flowers, which by repeated ſublimations become entirely white, and ſimilar to white cryſtalline arſenic. When regulus of arſenic is heated quickly and ſtrongly in open air, as under a muffle, it burns with a white or bluiſh flame, and diſſipates in a thick fume, which has a very fetid ſmell, like that of garlic. Regulus.

Regulus of arſenic may be combined with acids and moſt metals. See ARSENIC, n° 17. We ſhall only farther obſerve here, that, according to Mr Brandt, in the Swediſh Memoirs, the regulus of arſenic cannot be united with mercury. Although the phenomena exhibited by white arſenic and regulus of arſenic in ſolutions and allays are probably the ſame, yet an accurate compariſon of theſe would deſerve notice, eſpecially if the regulus employed were well made; for ſome difference muſt proceed from the greater or leſs quantity of what in the old chemiſtry is called phlogiſton with which it is united. See CHEMISTRY, n° 1288, &c.

REGULUS of Cobalt, is a ſemimetal lately diſcovered, and not yet perfectly well known. It receives its name from cobalt, becauſe it can only be extracted from the mineral properly ſo called. The proceſs by which this ſemimetal is obtained, is ſimilar to thoſe generally uſed for the extraction of metals from their ores. The cobalt muſt be thoroughly torrified, to deprive it of all the ſulphur and arſenic it contains; and the unmetallic earthy and ſtony matters muſt be ſeparated by waſhing. The cobalt thus prepared is then to be mixed with double or triple its quantity of black flux, and a little decrepitated ſea-ſalt; and muſt be fuſed either in a forge or in a hot furnace, for this ore is very difficult of fuſion. When the fuſion has been well made, we find upon breaking the crucible, after it has cooled, a metallic regulus covered with a ſcoria of a deep blue colour. The regulus is of a white metallic colour. The ſurface of its fracture is cloſe and ſmall-grained. The ſemimetal is hard, but brittle. When the fuſion has been well made, its ſurface appears to be carved with many convex threads, which croſs each other diverſely. As almoſt all cobalts contain alſo biſmuth, and even as much as of the regulus itſelf, this biſmuth is reduced by the ſame operation, and precipitated in the ſame manner, as the regulus of cobalt; for although theſe two metals are frequently mixed in the ſame mineral, that is, in cobalt, they are incapable of uniting together, and are always found diſtinct and ſeparate from one another when they are melted together. At the bottom of the crucible then we find both regulus of cobalt and biſmuth. The latter, having a greater ſpecific gravity, is found under the former. They may be ſeparated from each other by the blow of a hammer. Biſmuth may be eaſily diſtinguiſhed from the regulus of cobalt, not only from its ſituation in the crucible, but alſo by the large ſhining facets which appear in its fracture, and which are very different from the cloſe aſh-coloured grain of regulus of cobalt.

This ſemimetal is more difficult of fuſion than any other;

Regulus of Reichenberg.

other; is leſs eaſily calcinable, and much leſs volatile. Its calx is grey, and more or leſs brown; and when fuſed with vitrifiable matters, it changes into a beautiful blue glaſs called *ſmalt*. This calx, then, is one of thoſe which preſerve always a part of their inflammable principle. It is ſoluble in acids, as the regulus is. This regulus is ſoluble in vitriolic, marine, nitrous acids, and in aqua-regia, to all which it communicates colours. The ſolution in vitriolic acid is reddiſh; the ſolution in marine acid is of a fine bluiſh-green when hot, and its colour is almoſt totally effaced when cold, but is eaſily recoverable by heating it, without being obliged to uncork the bottle containing it. This ſolution of the calx of regulus of cobalt is the baſis of the ſympathetic ink; for without marine acid this ink cannot be made. All the ſolutions of regulus of cobalt may be precipitated by alkalis; and theſe precipitates are blue, which colour they retain when vitrified with the ſtrongeſt fire.

Not only ſympathetic ink, but alſo regulus of cobalt, may be made from the zaffre commonly ſold; which is nothing elſe than the calx of regulus of cobalt mixed with more or leſs pulveriſed flints. For this purpoſe we muſt ſeparate as well as we can the powder of flints from it, by waſhing, as M. Beaumé does, and then reduce it with black flux and ſea-ſalt. Regulus of cobalt ſeems incapable of uniting with ſulphur: but it eaſily unites with liver of ſulphur; and the union it forms is ſo intimate, that M. Beaumé could not ſeparate theſe two ſubſtances otherwiſe than by precipitation with an acid.

Many curious and intereſting remarks are ſtill to be diſcovered concerning this ſingular ſemimetal, and we may hope to receive further information from the endeavours of chemiſts who have undertaken the examination of it. M. Beaumé particularly has made conſiderable experiments on this ſubject, part of which he communicates to the public in his Courſe of Chemiſtry, and from whom we have borrowed the moſt of the above obſervations. See CHEMISTRY, n° 1294, &c.

REHEARSAL, in muſic and the drama, an eſſay or experiment of ſome compoſition, generally made in private, previous to its repreſentation or performance in public, in order to render the actors and performers more perfect in their parts.

REICHENBERG, in Bohemia, 95 miles weſt of Prague, 205 north-weſt of Vienna, Lat. 50. 2. E. Long. 12. 25. is only remarkable as the place where the Pruſſian army defeated the Auſtrians on the 21ſt of April 1757. The Auſtrian army, commanded by Count Konigſeck, was poſted near Reichenberg, and was attacked by the Pruſſians under the command of the prince of Brunſwick Bevern. The Pruſſians were 20,000, and the Auſtrians 28,000: the action began at half after ſix in the morning, when the Pruſſian lines were formed, and attacked the Auſtrian cavalry, which was ranged in three lines of 30 ſquadrons, and their two wings ſuſtained by the infantry, which was poſted among felled trees and entrenchments. The Auſtrians had a village on their right, and a wood on their left, where they were intrenched. The Pruſſian dragoons and grenadiers cleared the intrenchment and wood, and entirely routed the Auſtrian cavalry; at the ſame time, the redoubts that covered Reichenberg were taken by General Leſtewitz; and the Auſtrians were entirely defeated. The Pruſſians had ſeven officers and 100 men killed; 14 officers and 150 men wounded. The Auſtrians had 1000 men killed and wounded; 20 of their officers and 400 men taken priſoners. The action ended at eleven.

Reindeer

REIN-DEER, or *Tarandus*. See CERVUS, n° 4.

REINS, in anatomy, the ſame with KIDNEYS. See ANATOMY, n° 101.

REINS *of a Bridle*, are two long ſlips of leather, faſtened on each ſide a curb or ſnaffle, which the rider holds in his hand, to keep the horſe in ſubjection.

There is alſo what is called *falſe reins*; which is a lath of leather, paſſed ſometimes through the arch of the banquet, to bend the horſe's neck.

REJOINDER, in law, is the defendant's anſwer to the plaintiff's replication or reply. Thus, in the court of chancery, the defendant puts in an anſwer to the plaintiff's bill, which is ſometimes alſo called an *exception*; the plaintiff's anſwer to that is called a *replication*, and the defendant's anſwer to that a *rejoindre*.

RELAND (Adrian), an eminent Orientaliſt, born at Ryp, in North Holland, in 1676. During three years ſtudy under Surenhuſius, he made an uncommon progreſs in the Hebrew, Syriac, Chaldee, and Arabic languages; and theſe languages were always his favourite ſtudy. In 1701, he was, by the recommendation of King William, appointed profeſſor of Oriental languages and eccleſiaſtical antiquities in the univerſity of Utrecht; and died of the ſmall-pox in 1718. He was diſtinguiſhed by his modeſty, humanity, and learning; and carried on a correſpondence with the moſt eminent ſcholars of his time. His principal works are, 1. An excellent deſcription of Paleſtine. 2. Five diſſertations on the Medals of the ancient Hebrews, and ſeveral other diſſertations on different ſubjects. 3. An Introduction to the Hebrew Grammar. 4. The Antiquities of the ancient Hebrews. 5. On the Mahometan Religion. Theſe works are all written in Latin.

RELATION, the mutual reſpect of two things, or what each is with regard to the other. See METAPHYSICS, n° 93, &c. and 128, &c.

RELATION, in geometry. See RATIO.

RELATION, is alſo uſed for analogy. See ANALOGY, and METAPHYSICS, p. 529, &c.

RELATIVE, ſomething relating to or reſpecting another.

RELATIVE, in muſic. See MODE.

RELATIVE-Terms, in logic, are words which imply relation: ſuch are maſter and ſervant, huſband and wife, &c.

In grammar, relative words are thoſe which anſwer to ſome other word forgoing, called the *antecedent*; ſuch are the relative pronouns *qui, quæ, quod*, &c. and in Engliſh, *who, whom, which*, &c. The word anſwering to theſe relatives is often underſtood, as, "I know whom you mean," for "I know the perſon whom you mean."

RELAXATION, in medicine, the act of looſening or ſlackening; or the looſeneſs or ſlackneſs of the fibres, nerves, muſcles, &c.

RELAY, a ſupply of horſes, placed on the road, and appointed to be ready for a traveller to change, in order to make the greater expedition.

RELEASE, in law, is a diſcharge or conveyance of a man's right in lands or tenements, to another that

Release. Relics.

hath, fome eſtate in poſſeſſion. The words generally uſed there are "remiſed, releaſed and for ever quit-claimed." And theſe releaſes may enure, either, 1. By way of *enlarging the eſtate*, or *mitter l'eſtate*: as, if there be tenant for life or years, remainder to another in fee, and he in remainder releaſes all his right to the particular tenant and his heirs, that gives him the eſtate in fee. But in this caſe the releaſee muſt be in poſſeſſion of ſome eſtate, for the releaſe to work upon; for if there be leaſe for years, and, before he enters and is in poſſeſſion, the leſſor releaſes to him all his right in the reverſion, ſuch releaſe is void for want of poſſeſſion in the releaſee. 2. By way of *paſſing an eſtate*, or *mitter l'eſtate*: as, where one of two coparceners releaſeth all his right to the other, this paſſeth the freehold of the whole. And, in both theſe caſes, there muſt be a privity of eſtate between the releaſor and releaſee; that is, one of their eſtates muſt be ſo related to the other, as to make but one and the ſame eſtate in law. 3. By way of *paſſing a right*, or *mitter le droit*: as if a man be diſſeiſed, and releaſeth to his diſſeiſor all his right; hereby the diſſeiſor acquires a new right, which changes the quality of his eſtate, and renders that lawful which before was tortious. 4. By way of *extinguiſhment*: as if my tenant for life makes a leaſe to A for life, remainder to B and his heirs, and I releaſe to A; this extinguiſhes my right to the reverſion, and ſhall enure to the advantage of B's remainder as well as of A's particular eſtate. 5. By way of *entry and feoffment*: as if there be two joint diſſeiſors, and the diſſeiſee releaſes to one of them, he ſhall be ſole ſeiſed, and ſhall keep out his former companion; which is the ſame in effect as if the diſſeiſee had entered, and thereby put an end to the diſſeiſin, and afterwards had enfeoffed one of the diſſeiſors in fee. And hereupon we may obſerve, that when a man has in himſelf the poſſeſſion of lands, he muſt at the common law convey the freehold by feoffment and livery; which makes a notoriety in the country: but if a man has only a right or a future intereſt, he may convey that right or intereſt by a mere releaſe to him that is in poſſeſſion of the land: for the occupancy of the releſſee is a matter of ſufficient notoriety already.

RELEVANCY, in Scots law. See LAW, N° clxxxvi. 48.

RELICS, in the Romiſh church, the remains of the bodies or clothes of ſaints or martyrs, and the inſtruments by which they were put to death, devoutly preſerved, in honour to their memory; kiſſed, revered, and carried in proceſſion.

The reſpect which was juſtly due to the martyrs and teachers of the Chriſtian faith, in a few ages increaſed almoſt to adoration; and at length adoration was really paid both to departed ſaints and to relics of holy men or holy things. The abuſes of the church of Rome, with reſpect to relics, are very flagrant and notorious. For ſuch was the rage for them at one time, that, as F. Mabillon a Benedictine juſtly complains, the altars were loaded with ſuſpected relics; numerous ſpurious ones being everywhere offered to the piety and devotion of the faithful. He adds, too, that bones are often conſecrated, which, ſo far from belonging to ſaints, probably do not belong to Chriſtians. From the catacombs numerous relics have been taken, and yet it is not known who were the perſons interred therein. In the 11th century, relics were tried by fire, and thoſe which did not conſume were reckoned genuine, and the re not. Relics were, and ſtill are, preſerved on the altars whereon maſs is celebrated; a ſquare hole being made in the middle of the altar, big enough to receive the hand, and herein is the relic depoſited, being firſt wrapped in red ſilk, and incloſed in a leaden box.

The Romaniſts plead antiquity in behalf of relics: For the Manichees, out of hatred to the fleſh, which they conſidered as an evil principle refuſed to honour the relics of ſaints; which is reckoned a kind of proof that the Catholics did it in the firſt ages.

We know, indeed, that the touching of linen cloths on relics, from an opinion of ſome extraordinary virtue derived therefrom, was as ancient as the firſt ages, there being a hole made in the coffins of the 40 martyrs at Conſtantinople expreſsly for this purpoſe. The honouring the relics of ſaints, on which the church of Rome afterwards founded her ſuperſtitions and lucrative uſe of them, as objects of devotion, as a kind of charms or amulets, and as inſtruments of pretended miracles, appears to have originated in a very ancient cuſtom, that prevailed among Chriſtians, of aſſembling at the cemeteries or burying-places of the martyrs, for the purpoſe of commemorating them, and of performing divine worſhip. When the profeſſion of Chriſtianity obtained the protection of the civil government, under Conſtantine the Great, ſtately churches were erected over their ſepulchres, and their names and memories were treated with every poſſible token of affection and reſpect. This reverence, however, gradually exceeded all reaſonable bounds; and thoſe prayers and religious ſervices were thought to have a peculiar ſanctity and virtue, which were performed over their tombs. Hence the practice which afterwards obtained, of depoſiting relics of ſaints and martyrs under the altars in all churches. This practice was then thought of ſuch importance, that St Ambroſe would not conſecrate a church becauſe it had no relics; and the council of Conſtantinople in Trullo ordained, that thoſe altars ſhould be demoliſhed under which there were found no relics. The rage of procuring relics for this and other purpoſes of a ſimilar nature, became ſo exceſſive, that in 386 the emperor Theodoſius the Great was obliged to paſs a law, forbidding the people to dig up the bodies of the martyrs, and to traffic in their relics.

Such was the origin of that reſpect for ſacred relics, which afterwards was perverted into a formal worſhip of them, and became the occaſion of innumerable proceſſions, pilgrimages, and miracles, from which the church of Rome hath derived incredible advantage.—In the end of the ninth century, it was not ſufficient to reverence departed ſaints, and to confide in their interceſſions and ſuccours, to clothe them with an imaginary power of healing diſeaſes, working miracles and delivering from all ſorts of calamities and dangers; their bones, their clothes, the apparel and furniture they had poſſeſſed during their lives, the very ground which they had touched, or in which their putrefied carcaſes were laid, were treated with a ſtupid veneration, and ſuppoſed to retain the marvellous virtue of healing all diſorders both of body and mind, and of defending ſuch as poſſeſſed them againſt all the aſſaults and devices of the devil,

Relics. vil. The conſequence of all this was, that every one was eager to provide himſelf with theſe ſalutary remedies; conſequently great numbers undertook fatiguing and perilous voyages, and ſubjected themſelves to all ſorts of hardſhips; while others made uſe of this deluſion to accumulate their riches, and to impoſe upon the miſerable multitude by the moſt impious and ſhocking inventions. As the demand for relics was prodigious and univerſal, the clergy employed the utmoſt dexterity to ſatisfy all demands, and were far from being nice in the methods they uſed for that end. The bodies of the ſaints were ſought by faſting and prayer, inſtituted by the prieſt in order to obtain a divine anſwer and an infallible direction, and this pretended direction never failed to accompliſh their deſires; the holy carcaſe was always found, and that always in conſequence, as they impiouſly gave out, of the ſuggeſtion and inſpiration of God himſelf. Each diſcovery of this kind was attended with exceſſive demonſtrations of joy, and animated the zeal of theſe devout ſeekers to enrich the church ſtill more and more with this new kind of treaſure. Many travelled with this view into the Eaſtern provinces, and frequented the places which Chriſt and his diſciples had honoured with their preſence, that, with the bones and other ſacred remains of the firſt heralds of the goſpel, they might comfort dejected minds, calm trembling conſciences, ſave ſinking ſtates, and defend their inhabitants from all ſorts of calamities. Nor did theſe pious travellers return home empty; the craft, dexterity, and knavery of the Greeks, found a rich prey in the ſtupid credulity of the Latin relic-hunters, and made a profitable commerce of this new devotion. The latter paid conſiderable ſums for legs and arms, ſkulls and jaw-bones (ſeveral of which were Pagan, and ſome not human), and other things that were ſuppoſed to have belonged to the primitive worthies of the Chriſtian church; and thus the Latin churches came to the poſſeſſion of thoſe celebrated relics of St Mark, St James, St Bartholomew, Cyprian, Pantaleon, and others, which they ſhow at this day with ſo much oſtentation. But there were many who, unable to procure for themſelves theſe ſpiritual treaſures by voyages and prayers, had recourſe to violence and theft; for all ſorts of means, and all ſorts of attempts in a cauſe of this nature, were conſidered, when ſucceſsful, as pious and acceptable to the Supreme Being.—Beſides the arguments from antiquity to which the Papiſts refer, in vindication of their worſhip of relics, of which the reader may form ſome judgment from this article, Bellarmine appeals to Scripture in ſupport of it, and cites the following paſſages, viz. Exod. xiii. 19.; Deut. xxxiv. 6.; 2 Kings xiii. 21.; 2 Kings xxiii. 16, 17, 18.; Iſaiah xi. 10.; Matthew xi. 20, 21, 22.; Acts v. 12—15.; Acts xix. 11, 12. See POPERY.

The Roman Catholics in Great Britain do not acknowledge any worſhip to be due to relics, but merely a high veneration and reſpect, by which means they think they honour God, who, they ſay, has often wrought very extraordinary miracles by them. But, however proper this veneration and reſpect may be, its abuſe has been ſo great and ſo general, as fully to warrant the rejection of them altogether.

Relics are forbidden to be uſed or brought into England by ſeveral ſtatutes; and juſtices of peace are empowered to ſearch houſes for popiſh books and relics, which, when found, are to be defaced and burnt, &c. 3 Jac. I. cap. 26.

RELICT, in law, the ſame with WIDOW.

RELIEF (*Relevamen*; but, in Domeſday, *Relevatio*, *Relevium*), ſignifies a certain ſum of money, which the tenant, holding by knight's ſervice, grand ſerjeanty, or other tenure, (for which homage or legal ſervice is due), and being at full age at the death of his anceſtor, paid unto his lord at his entrance. See PRIMER.

Though reliefs had their original while feuds were only life-eſtates, yet they continued after feuds became hereditary; and were therefore looked upon, very juſtly, as one of the greateſt grievances of tenure: eſpecially when, at the firſt, they were merely arbitrary and at the will of the lord; ſo that, if he pleaſed to demand an exorbitant relief, it was in effect to diſinherit the heir. The Engliſh ill brooked this conſequence of their new-adopted policy, and therefore William the Conqueror by his laws *aſcertained* the relief, by directing (in imitation of the Daniſh heriots), that a certain quantity of arms, and habiliments of war, ſhould be paid by the earls, barons, and vavaſours reſpectively; and, if the latter had no arms, they ſhould pay 100s. William Rufus broke through this compoſition, and again demanded arbitrary uncertain reliefs, as due by the feodal laws; thereby in effect obliging every heir to new-purchaſe or *redeem* his land: but his brother Henry I. by the charter before-mentioned, reſtored his father's law; and ordained, that the relief to be paid ſhould be according to the law ſo eſtabliſhed, and not an arbitrary redemption.—But afterwards, when, by an ordinance in 27 Hen. II. called the *aſſiſe of arms*, it was provided, that every man's armour ſhould deſcend to his heir, for defence of the realm, and it thereby became impracticable to pay theſe acknowledgments in arms according to the laws of the Conqueror, the compoſition was univerſally accepted of 100s, for every knight's fee, as we find it ever after eſtabliſhed. But it muſt be remembered, that this relief was only then payable, if the heir at the death of his anceſtor had attained his full age of 21 years.

To RELIEVE *the* GUARD, is to put freſh men upon guard, which is generally every 24 hours.

To RELIEVE *the Trenches*, is to relieve the guard of the trenches, by appointing thoſe for that duty who have been there before.

To RELIEVE *the Sentries*, is to put freſh men upon that duty from the guard, which is generally done every two hours, by a corporal who attends the relief, to ſee that the proper orders are delivered to the ſoldier who relieves.

RELIEVO, or RELIEF, in ſculpture, &c, is the projecture or ſtanding out of a figure which ariſes prominent from the ground or plane on which it is formed; whether that figure be cut with the chiſſel, moulded, or caſt.

There are three kinds or degrees of relievo, viz. alto, baſſo, and demi-relievo. The alto-relievo, called alſo *haut-relief*, or *high-relievo*, is when the figure is formed after nature, and projects as much as the life. Baſſo-relievo, baſs-relief, or low-relievo, is when the work is raiſed a little from the ground, as in medals, and the frontiſpieces of buildings; and particularly in the hiſto-

Relict || Relieve.

Relievo, Italy, &c.

ries, feftoons, foliages, and other ornaments of friezes. Demi-relievo is when one half of the figure rises from the plane. When, in a baſſo-relievo, there are parts that ſtand clear out, detached from the reſt, the work is called a *ronde-boſſe*.

In architecture, the relievo or projecture of the ornaments ought always to be proportioned to the magnitude of the building it adorns, and to the diſtance at which it is to be viewed.

Relievo, or *Relief*, in painting, is the degree of boldneſs with which the figures ſeem, at a due diſtance, to ſtand out from the ground of the painting.

The relievo depends much upon the depth of the ſhadow, and the ſtrength of the light; or on the bright of the different colours, bordering on one another; and particularly on the difference of the colour of the figure from that of the ground: thus, when the light is ſo diſpoſed as to make the neareſt parts of the figure advance, and is well diffuſed on the maſſes, yet inſenſibly diminiſhing, and terminating in a large ſpacious ſhadow, brought off inſenſibly, the relievo is ſaid to be bold, and the clair obſcure well underſtood.

RELIGION (Religio), is a Latin word derived, according to Cicero [a], from *religere*, "to re-conſider;" but according to Servius and moſt modern grammarians, from *religare*, "to bind faſt." The reaſon aſſigned by the Roman orator for deducing *religio* from *relego*, is in theſe words, "qui autem omnia, quæ ad cultum deorum pertinerent, diligenter retractarent, et tanquam relegerent, ſunt dicti *religioſi* ex relegendo." The reaſon given by Servius for his derivation of the word is, "quod mentem religio religet." If the Ciceronian etymology be the true one, the word *religion* will denote the diligent ſtudy of whatever pertains to the worſhip of the gods; but according to the other derivation, which we are inclined to prefer, it denotes that obligation which we feel on our minds from the relation in which we ſtand to ſome ſuperior power. In either caſe, the import of the word *religion* is different from that of *theology*, as the former ſignifies a number of practical duties, and the latter a ſyſtem of ſpeculative truths. *Theology* is therefore the foundation of *religion*, or the ſcience from which it ſprings; for no man can ſtudy what pertains to the worſhip of ſuperior powers till he believe that ſuch powers exiſt, or feel any obligation on his mind from a relation of which he knows nothing.

[a] De Natura Deorum lib. 2. § 28.

1 Religion defined;

2 And diſtinguiſhed from theology.

This idea of religion, as diſtinguiſhed from theology, comprehends the duties not only of thoſe more refined and complicated ſyſtems of theiſm or polytheiſm which have prevailed among civilized and enlightened nations, ſuch as the polytheiſm of the Greeks and Romans, and the theiſm of the Jews, the Mahometans, and the Chriſtians; it comprehends every ſentiment of obligation which human beings have ever conceived themſelves under to ſuperior powers, as well as all the forms of worſhip which have ever been practiſed through the world, however fantaſtic, immoral, or abſurd.

3 It is an important ſubject of ſpeculation.

When we turn our eyes to this feature of the human character, we find it peculiarly intereſting. Mankind are diſtinguiſhed from the brutal tribes, and elevated to an higher rank, by the rational and moral faculties with which they are endowed; but they are ſtill more widely diſtinguiſhed from the inferior creation, and more highly exalted above them, by being made capable of religious notions and religious ſentiments. The ſlighteſt knowledge of hiſtory is ſufficient to inform us, that religion has ever had a powerful influence in moulding the ſentiments and manners of men. It has ſometimes dignified, and ſometimes degraded, the human character. In one region or age it has been favourable to civilization and refinement; in another, it has occaſionally cramped the genius, depraved the morals, and deformed the manners of men. The varieties of religion are innumerable; and the members of every diſtinct ſect muſt view all who differ from them as more or leſs miſtaken with reſpect to the moſt important concerns of man. Religion ſeems to be congenial to the heart of man; for wherever human ſociety ſubſiſts, there we are certain of finding religious opinions and ſentiments. Religion.

4 Three queſtions concerning religion.

It muſt, therefore, be an important ſubject of ſpeculation to the man and the philoſopher to conſider the origin of religion; to inquire, How far religion in general has a tendency to promote or to injure the order and happineſs of ſociety? and, above all, to examine, What particular religion is beſt calculated to produce an happy influence on human life?

We ſhall endeavour to give a ſatisfactory anſwer to each of theſe queſtions, reſerving to the article Theology the conſideration of the dogmas of that particular religion which, from our preſent inquiries, ſhall appear to be true, and to have the happieſt influence on human life and manners.

5 Of the ſource or foundation of religion.

I. The foundation of all religion reſts on the belief of the exiſtence of one or more ſuperior beings, who govern the world, and upon whom the happineſs or miſery of mankind ultimately depends. Of this belief, as it may be ſaid to have been univerſal, there ſeem to be but three ſources that can be conceived. Either the image of Deity muſt be ſtamped on the mind of every human being, the ſavage as well as the ſage; or the founders of ſocieties, and other eminent perſons, tracing by the efforts of their own reaſon viſible effects to inviſible cauſes, muſt have diſcovered the exiſtence of ſuperior powers, and communicated the diſcovery to their aſſociates and followers; or, laſtly, the univerſal belief in ſuch powers muſt have been derived by tradition from a primæval revelation, communicated to the progenitors of the human race.

6 It does not ariſe from an original ſtamp on the mind;

One or other of theſe hypotheſes muſt be true, becauſe a fourth cannot be framed. But we have elſewhere (Polythelism, n° 2.) examined the reaſoning which has been employed to eſtabliſh the firſt, and ſhewn that it proceeds upon falſe notions of human nature. We ſhould likewiſe pronounce it contrary to fact, could we believe, on the authority of ſome of its patrons, who are not aſhamed to contradict one another, that the Kamtſchatkans, and other tribes, in the loweſt ſtate of reaſoning and morals, have no ideas whatever of Deity. We proceed, therefore, to conſider the ſecond hypotheſis, which is much more plauſible, and will bear a ſtricter ſcrutiny.

7 Nor from reaſoning;

That the exiſtence and many of the attributes of the Deity are capable of rigid demonſtration, is a truth which cannot be controverted either by the philoſopher or the Chriſtian; for "the inviſible things of Him from the creation of the world are clearly ſeen, being underſtood by the things that are made, even His eternal power and Godhead," (ſee Metaphysics, Part III. chap.

Religion. chap. vi. and THEOLOGY, n° 8, 9.) But surely it would be rash to infer, either that every truth for which, when it is known, the ingenuity of man can frame a demonstration, is therefore *discoverable* by human sagacity, or that all the truths which have been discovered by a *Newton* or a *Locke* might therefore have been discovered by untaught barbarians. In mathematical science, there are few demonstrations of easier comprehension than that given by Euclid, of the theorem of which Pythagoras is the reputed author; yet no man ever dreamed that a boy capable of being made to understand that theorem, must therefore have sagacity equal to the sage of Samos; or that such a boy, having never heard of the relation between the hypothenuse and other two sides of a right angled triangle, would be likely to *discover* that the square of the former is precisely equal to the sum of the squares of the latter. Just so it seems to be with the fundamental truths of theology. There can hardly be conceived a demonstration less intricate, or more conclusive, than that which the man of science employs to prove the existence of at least one God, possessed of boundless power and perfect wisdom. And could we suppose that the human race had remained without any knowledge of God in the world, till certain lucky individuals had by some means or other made themselves masters of the rules of logic, and the philosophy of causes, there can be no doubt but that these individuals might have discovered the existence of superior powers, and communicated their discovery to their associates and followers. But this supposition cannot be admitted, as it is contradicted by the evidence of all history. No nation or tribe has ever been found, in which there is not reason to believe that some notions were entertained of superior and invisible powers, upon which depends the happiness or misery of mankind: and from the most authentic records of antiquity, it is apparent that very pure principles of theism prevailed in some nations long before the rules of logic, and the philosophy of causes, were thought of by any people under heaven.

The supposition before us is inadmissible upon other accounts. Some modern philosophers have fancied that the original progenitors of mankind were left entirely to themselves from the moment of their creation; that they wandered about for ages without the use of speech and in the lowest state of savagism; but that they gradually civilized themselves, and at last stumbled upon the contrivance of making articulate sounds significant of ideas, which was followed by the invention of arts and sciences, with all the blessings of religion and legislation in their train. But this is a wild reverie, inconsistent with the phenomena of human nature.

It is a well known fact, that a man blind from his birth, and suddenly made to see, would not by means of his newly acquired sense discern either the magnitude or figure or distance of objects, but would conceive every thing which communicated to him visible sensations as inseparably united to his eye or his mind (See METAPHYSICS, n° 49—53). How long his sense of sight would remain in such an imperfect state, we cannot positively say; but from attending to the visible sensations of infants, we are confident that weeks, if not months, elapse before they can distinguish one thing from another. We have indeed been told, that Cheselden's famous patient, though he was at first in the state which we have described, learned to distinguish objects by sight in the course of a few hours, or at the most of a few days; but admitting this to a certain extent to be true, it may easily be accounted for. The disease called a *cataract* seldom occasions total blindness; but let us suppose the eyes of this man to have been so completely dimmed as to communicate no sensation whatever upon being exposed to the rays of light; still we must remember that he had long possessed the power of loco-motion and all his other senses in perfection. He was therefore well acquainted with the real, *i. e.* the tangible magnitude, figure, and distance of many objects; and having been often told that the things which he touched would, upon his acquisition of sight, communicate new sensations to his mind, differing from each other according to the distance, figure, and magnitude of the objects by which they were occasioned, he would soon learn to infer the one from the other, and to distinguish near objects by means of his sight. Religion.

The progenitors of the human race, however, if left to themselves from the moment of their creation, had not the same advantages. When they first opened their eyes, they had neither moved, nor handled, nor heard, nor smelled, nor tasted, nor had a single idea or notion treasured up in their memories; but were in all these respects in the state of new-born infants. Now we should be glad to be informed by those sages who have conducted mankind through many generations in which they were *mutum et turpe pecus* to that happy period when they invented language, how the first men were taught to distinguish objects by their sense of sight, and how they contrived to *live* till this most necessary faculty was acquired? It does not appear that men are like brutes, provided with a number of instincts which guide them blindfold and without experience to whatever is necessary for their own preservation (see INSTINCT): On the contrary, all voyagers tell us that, in strange and uninhabited countries, they dare not venture to taste unknown fruits unless they perceive that these fruits are eaten by the fowls of the air. But without the aid of instinct, or of some other guide equally to be depended upon, it is not in our power to conceive how men dropt from the hands of their Creator, and left from that instant wholly to themselves, could move a single step without the most imminent danger, or even stretch out their hands to lay hold of that food which we may suppose to have been placed within their reach. They could not, for many days, distinguish a precipice from a plane, a rock from a pit, or a river from the meadows through which it rolled. And in such circumstances, how could they possibly exist, till their sense of sight had acquired such perfection as to be a sufficient guide to all their necessary motions? Can any consistent theist suppose that the God whose goodness is so conspicuously displayed in all his works, would leave his noblest creature on earth, a creature for whose comfort alone many other creatures seem to have been formed, in a situation so forlorn as this, where his immediate destruction appears to be inevitable? No! This supposition cannot be formed, because mankind still exist.

3 But from an original revelation.

Will it then be said, that when God formed the first men, he not only gave them organs of sensation, and souls capable of arriving by discipline at the exercise of reason, but that he also impressed upon their minds adequate

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[illegible] of every object in which [illegible] all their organs, external and internal, [illegible] to the utmost possible degree perfection [illegible] the laws of reasoning and, in a word, to imbue the mind with every [illegible] of which it is capable. This is indeed our own [illegible], and is perfectly agreeable to what we are taught by the Hebrew lawgiver. When God had created Adam and Eve, Moſes does not ſay that he left them to acquire by ſlow degrees the uſe of their [illegible] and reaſoning powers, and to diſtinguiſh as they [illegible] that were ſalutary from thoſe that were [illegible]. No: he placed them in a garden where every tree bore fruit fit for food; he warned them particularly againſt the fruit of that tree; he brought before them the various animals which roamed through the garden; he arranged theſe animals into their proper genera and ſpecies; and by teaching Adam to give them names, he communicated to the firſt pair the elements of language. This condeſcenſion appears in every reſpect worthy of perfect benevolence; and indeed without it the helpleſs man and woman could not have lived one whole week. But it cannot be ſuppoſed, that amidſt ſo much uſeful inſtruction the gracious Creator would neglect to communicate to his rational creatures the knowledge of himſelf; to inform them of their own origin, and the relation in which they ſtood to him; and to ſtate in the plaineſt terms the duties incumbent on them in return for ſo much goodneſs.

10 The mode of communication [illegible]

In what manner all this knowledge was communicated, cannot be certainly known. It may have been in either of the following ways conceivable by us, or in others of which we can form no conception. God may have miraculouſly ſtored the minds of the firſt pair with adequate ideas and notions of ſenſible and intellectual objects; and then by an internal operation of his own Spirit have enabled them to exert at once their rational faculties ſo as to diſcover his exiſtence and attributes, together with the relation in which as creatures they ſtood to him their Almighty Creator. Or, after rendering them capable of diſtinguiſhing objects by means of their ſenſes, of comparing their ideas, and underſtanding a language, he may have exhibited himſelf under ſome ſenſible emblem, and conducted them by degrees from one branch of knowledge to another, as a ſchoolmaſter conducts his pupils, till they were ſufficiently acquainted with every thing relating to their own happineſs and duty as rational, moral, and religious, creatures. In determining the queſtion before us, it is of no importance whether infinite wiſdom adopted either of theſe methods, or ſome other different from them both which we cannot conceive. The ordinary proceſs in which men acquire knowledge is, by the laws of their nature, extremely tedious. They cannot reaſon before their minds be ſtored with ideas and notions; and they cannot acquire theſe but through the medium of their ſenſes long exerciſed on external objects.

11 But whether internal or external, it was equally a revelation.

The progenitors of the human race, left to inform themſelves by this proceſs, muſt have inevitably periſhed before they had acquired one diſtinct notion; and it is the ſame thing with reſpect to the origin of religion, whether God preſerved them from deſtruction by an *internal* or *external* revelation. If he ſtored their minds at once with the rudiments of all uſeful knowledge, and rendered them capable of exerting their natural faculties, as, by tracing effects to their cauſes, to diſcover his being and attributes, he *revealed* himſelf to them as certainly as he did afterwards to Moſes, when to him he condeſcended to ſpeak face to face.

12 Such a revelation muſt naturally be handed to poſterity.

If this reaſoning be admitted as fair and concluſive, and we apprehend that the principles on which it proceeds cannot be conſidered as ill-founded, we have advanced ſo far as to prove that mankind muſt have been originally enlightened by a revelation. But it is ſcarce neceſſary to obſerve, that this revelation muſt have been handed down through ſucceeding generations. It could not fail to reach the era of the deluge. It is not abſurd to ſuppoſe, that he who ſpake from heaven to Adam, ſpake alſo to Noah. And both the revelation which had been handed down to the poſtdeluvian patriarch by tradition, and that which was communicated immediately to himſelf, would be by him made known to his deſcendants. Thus it appears almoſt impoſſible that ſome part of the religious ſentiments of mankind ſhould not have been derived from revelation; and that not of the religious ſentiments of one particular family or tribe, but of almoſt all the nations of the earth.

13 The authority of the Jewiſh and Chriſtian ſcriptures, &c.

This concluſion, which we have deduced by fair reaſoning from the benevolence of God and the nature of man, is confirmed by the authority of the Jewiſh and Chriſtian Scriptures, which are entitled to more implicit credit than all the other records of ancient hiſtory.

When we review the internal and external evidence of the authenticity of theſe ſacred books, we cannot for a moment heſitate to receive them as the genuine *word of God*. If we examine their internal character, they every where appear to be indeed the voice of Heaven. The creation of the world—the manner in which this globe was firſt peopled—the deluge which ſwept away its inhabitants—the ſucceeding views of the ſtate of mankind in the next ages after the deluge—the calling of Abraham—the legiſlation of Moſes—the whole ſeries of events which befel the Jewiſh nation—the prophecies—the appearance of Jeſus Chriſt, and the promulgation of his goſpel, as explained to us in the Scriptures—form one ſeries, which is, in the higheſt degree, illuſtrative of the power, wiſdom, and goodneſs of the Supreme Being.

While it muſt be allowed that the human mind is ever prone to debaſe the ſublime principles of true religion by enthuſiaſm and ſuperſtition, reaſon and candour will not for a moment heſitate to acknowledge, that the whole ſyſtem of revelation repreſents the Supreme Being in the moſt ſublime and amiable light: that, in it, religion appears eſſentially connected with morality: that the legiſlative code of Moſes was ſuch as no legiſlator ever formed and eſtabliſhed among a people equally rude and uncultivated: that the manners and morals of the Jews, vicious and ſavage as they may in ſome inſtances appear, yet merit a much higher character than thoſe either of their neighbours, or of almoſt any other nation, whoſe circumſtances and character were in other reſpects ſimilar to theirs: that there is an infinite difference between the Scripture prophecies and the oracles and predictions which prevailed among heathen nations: and that the miracles recorded in thoſe writings which we eſteem ſacred were attended with circumſtances which entitle them to be ranked in a very different

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14 The five books of Moſes proved to be divine.

But as the evidence of the divine origin of the primæval religion reſts particularly on the authority of the firſt five books of the Old Teſtament, it may be thought incumbent on us to ſupport our reaſoning on this ſubject, by proving, that the author of thoſe books was indeed inſpired by God. This we ſhall endeavour to do by one deciſive argument; for the nature of the article, and the limits preſcribed us, admit not of our entering into a minute detail of all that has been written on the divine legation of Moſes.

If the miracles recorded in the book of Exodus, and the other writings of the Hebrew lawgiver, were really performed; if the firſt-born of the Egyptians were all cut off in one night, as is there related; and if the children of Iſrael paſſed through the Red ſea, the waters being divided, and forming a wall on their right hand and on their left—it muſt neceſſarily be granted, that Moſes was ſent by God; becauſe nothing leſs than a divine power was ſufficient to perform ſuch wonderful works. But he who ſuppoſes that thoſe works were never performed, muſt affirm that the books recording them were *forged*, either at the era in which the miracles are ſaid to have been wrought, or at ſome ſubſequent era: There is no other alternative.

15 For it was otherwiſe impoſſible to impoſe them on the Jews in the era to which they relate, or

That they could not be *forged* at the era in which they affirm the miracles to have been wrought, a very few reflections will make incontrovertibly evident. Theſe books inform the people for whoſe uſe they were written that their author, after having inflicted various plagues upon Pharaoh and his ſubjects, brought them, to the number of 600,000, out of Egypt with a high hand; that they were led by a pillar of cloud through the day, and by a pillar of fire through the night, to the brink of the Red ſea, where they were almoſt overtaken by the Egyptians, who had purſued them with chariots and horſes; that, to make a way for their eſcape, Moſes ſtretched out his rod over the ſea, which was immediately divided, and permitted them to paſs through on dry ground, between two walls of water; and that the Egyptians, purſuing and going in after them to the midſt of the ſea, were all drowned by the return of the waters to their uſual ſtate, as ſoon as the Hebrews arrived at the further ſhore. Is it poſſible now that Moſes or any other man could have perſuaded 600,000 perſons, however barbarous and illiterate we ſuppoſe them, that they had been witneſſes of all theſe wonderful works, if no ſuch works had been performed? Could any art or eloquence perſuade all the inhabitants of Philadelphia, that they had yeſterday walked on dry ground through a ſea twenty or thirty miles wide, the waters being divided and forming a wall on their right hand and on their left? If this queſtion muſt be anſwered in the negative, it is abſolutely impoſſible that the books of Moſes, ſuppoſing them to have been forged, could have been received by the people who were alive when thoſe wonders are ſaid to have been wrought.

16 In any after period.

Let us now inquire, whether, if they be forgeries, they could have been received as authentic at any ſubſequent period; and we ſhall ſoon find this ſuppoſition as impoſſible as the former. The books claiming Moſes for their author ſpeak of themſelves as delivered by him and from his days kept in the ark of the covenant*; an ark which, upon this ſuppoſition, had no exiſtence prior to the forgery. They ſpeak of themſelves likewiſe, not only as a hiſtory of miracles wrought by their author, but as the ſtatutes or municipal law of the nation, of which a copy was to be always in the poſſeſſion of the prieſts, and another in that of the ſupreme magiſtrate†. Now, in whatever age we ſuppoſe theſe books to have been forged, they could not poſſibly be received as authentic; becauſe no copy of them could then be found either with the king, with the prieſts, or in the ark, though, as they contain the ſtatute law of the land, it is not conceivable that, if they had exiſted, they could have been kept ſecret. Could any man, at this day, forge a book of ſtatutes for England or America and make it paſs upon theſe nations for the only book of ſtatutes which they had ever known? Was there ever ſince the world began a book of ſham ſtatutes, and theſe, too, multifarious and burdenſome, impoſed upon any people as the only ſtatutes by which they and their fathers had been governed for ages? Such a forgery is evidently impoſſible.

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* Deut. xxxi. 24—27.

† Deut. xvii. 19.

But the books of Moſes have internal proofs of authenticity, which no other books of ancient ſtatutes ever had. They not only contain the laws, but ſ al g ve an hiſtorical account of their enactment, and the reaſons upon which they were founded. Thus they tell us§, that the rite of circumciſion was inſtituted as a mark of the covenant between God and the founder of the Jewiſh nation, and that the practice of it was enforced by the declaration of the Almighty, that every uncircumciſed man-child ſhould be cut off from his people. They inform us that the annual ſolemnity of the paſſover was inſtituted in commemoration of their deliverance when God ſlew, in one night, all the firſt-born of the Egyptians; that the firſt-born of Iſrael, both of men and beaſt, were on the ſame occaſion dedicated for ever to God, who took the Levites inſtead of the firſt-born of the men‡; that this tribe was conſecrated as prieſts, by whoſe hands alone the ſacrifices of the people were to be offered; that it was death for any perſon of a different tribe to approach the altar, or even to touch the ark of the covenant; and that Aaron's budding rod was kept in the ark in memory of the wonderful deſtruction of Korah, Dathan, and Abiram, for their rebellion againſt the prieſthood.

§ Gen. xvii.

‡ Exod. xii. and Numb. viii.

Is it poſſible now, if all theſe things had not been practiſed among the Hebrews from the era of Moſes, with a retroſpect to the ſignal mercies which they are ſaid to commemorate, that any man or body of men could have perſuaded a whole nation, by means of forged books, that they had always religiouſly obſerved ſuch inſtitutions? Could it have been poſſible, at any period poſterior to the Exodus, to perſuade the Iſraelites that they and their fathers had all been circumciſed on the eighth day from their birth, if they had been conſcious themſelves that they had never been circumciſed at all? or that the paſſover was kept in memory of their deliverance from Egyptian bondage, if no ſuch feſtival was known among them?

But let us ſuppoſe that circumciſion had been practiſed, and all their other rites and ceremonies obſerved from time immemorial, without their knowing any reaſon of ſuch inſtitutions; ſtill it muſt be confeſſed that the forger of theſe books, if they *were* forged, conſtructed his narrative in ſuch a manner as that no man

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of [illegible] authentic. He ſays [illegible] and virtue, who has publiſhed a book on the importance of religious opinions, labours to ſhow that religious eſtabliſhments are indiſpenſably neceſſary for the maintenance of civil order, and demonſtrates how weak the influence of political inſtitutions is on the morals of mankind; but he refuſes to review the hiſtory of paſt ages in order to diſcover how far religious opinions have actually been injurious or beneficial to the welfare of ſociety; chooſing rather to content himſelf with the reſult of a ſeries of metaphyſical diſquiſitions.

We admire the ſpirit which induced a man who had ſpent a conſiderable part of his life amid the hurry of public buſineſs, to become the ſtrenuous advocate of religion; but we cannot help thinking that, notwithſtanding the eloquence, the acuteneſs, and the knowledge of mankind which he has diſplayed, his refuſing to admit the evidence of facts concerning the influence of religion on ſociety may poſſibly be regarded by its enemies as a tacit acknowledgement that the evidence of facts would be unfavourable to the cauſe which he wiſhes to defend. The fallacy of general reaſonings, and the inutility of metaphyſics for the purpoſes of life, are ſo univerſally acknowledged, that they have long been the theme of declamation. Though the abuſes of religion, as well as the abuſes of reaſon, the perverſion of any of the principles of the human mind, and the miſapplication of the gifts of providence, may have often produced effects hurtful to the virtue and the happineſs of mankind; yet, after tracing religion to a divine origin, we cannot, for a moment, allow ourſelves to think that the primary tendency of religion muſt be hoſtile to the intereſts of ſociety, or that it is neceſſary to view it abſtractly in order that we may not behold it in an odious light. Often has the ſceptic attacked religion with artful malice; but perhaps none of his attacks has been ſo ſkilfully directed as that which has firſt ridiculed the abſurdity of the moſt abſurd ſuperſtitions, and afterwards laboured to prove that the moſt abſurd ſyſtem of polytheiſm is more favourable to the intereſts of ſociety than the pureſt and moſt ſublime theiſm. Inſtances in which the abuſe of religion had tended to deprave the human heart, and had led to the moſt ſhocking crimes, have been aſſiduouſly collected, and diſplayed in all the aggravating colours in which eloquence could array them, till at length even the friends of true religion have been abaſhed; and it has become a faſhionable opinion, that nothing but ſelf-intereſt or bigotry can prompt men to repreſent religion as the friend of civil order. But let us try if, by a candid conſideration of what effects have reſulted to ſociety from religious principles, in general, without comparing theſe with regard to truth or falſehood, we can advance any thing to vindicate the character of religion.

18 Triumphs of the ſceptic on account of the abuſes of religion.

Notions of Deity in general, of various orders of divinities, of their moral character, of their influence on human life, of a future ſtate, and of the immortality of the human ſoul, conſtitute the leading articles of religion. Let us view theſe together with the rites to which they have given riſe; and we may perhaps be enabled to form ſome well-grounded notions on this important point.

19 The firſt religious opinions entertained by men could not poſſibly be injurious to ſociety.

1. Having proved that the firſt religious principles entertained by men were derived from revelation, it is impoſſible to ſuppoſe that they could produce effects injurious

ſuch [illegible] ſuch an affection was [illegible] and to the ritual he was endeavouring to make them conform was oppreſſively [illegible] would have ventured to put his hand to the tent by moving the ark and even touching it; and ſuch a teſt would at once have expoſed the impoſture. The budding rod, too, and the pot of manna, which, though long preſerved, were never but to be heard of, muſt have produced inquiries that could not fail to end in detection. Theſe books ſpeak likewiſe of weekly faſtaths, daily ſacrifices, yearly expiation, and monthly feſtivals, all to be kept in remembrance of great things particularly ſpecified as done for the nation at an early period of its exiſtence. If this was not the caſe, could the forger of the books have perſuaded the people that it really was ſo? The enlightened readers of this nation would be offended were we to compare them with the ancient Iſraelites; but ſurely they will not ſay that we are partial to that people, if we bring them to a level with the moſt ſavage tribes of the Ruſſian empire, who profeſs Chriſtianity? Now, were a book to be forged containing an account of many ſtrange things done a thouſand years ago in Siberia by an *Apollonius*, or any other philoſopher or hero, numbers of the barbarians inhabiting that country would, we doubt not, give implicit credit to the *legend*: But were the author, in confirmation of his narrative, to affirm, that all the Siberians had from that day to this kept ſacred the firſt day of the week in memory of his hero; that they had all been baptized or circumciſed in his name; that in their public judicatories they had ſworn by his name, and upon that very book which they had never ſeen before; and that the very ſame book was their law and their goſpel, by which for a thouſand years back the actions of the whole people had been regulated—ſurely the groſſeſt ſavage among them would reject with contempt and indignation a forgery ſo palpable.

If this reaſoning be concluſive, the books of Moſes muſt indubitably be authentic, and he himſelf muſt have been inſpired by the ſpirit of God. But this point being eſtabliſhed, the queſtion reſpecting the origin of the primæval religion is completely anſwered. The writer of the book of Geneſis informs us, that Adam and Noah received many revelations from the Author of their being, and that their religion was founded on the principles of the pureſt theiſm. How it degenerated among the greater part of their deſcendants into the groſſeſt idolatry, has been ſhown at large in another place. See POLYTHEISM.

17 Of the influence of religion on ſociety.

II. Having thus anſwered the firſt queſtion propoſed for diſcuſſion in the preſent article, we now proceed to conſider the ſecond, and to inquire whether and how far religious ſentiments have a tendency to injure or to promote the welfare of ſociety? This is a ſubject of the utmoſt importance; and if we prove ſucceſsful in our inquiries, we ſhall be enabled to determine whether the governors of mankind ought carefully to ſupport religious eſtabliſhments, or whether the philoſopher who calls himſelf a citizen of the world, and profeſſes to feel the moſt eager deſire to promote the intereſts of his ſpecies, acts conſiſtently when he labours to exterminate religion from among men.

A celebrated French financier *, a man of abilities

* M. Necker.

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20 The effect of atheiſm on the manners of nations.

21 Would be more malignant than that of the moſt abſurd paganiſm.

The worſt ſpecies of paganiſm, even that which prevails among ſavages who worſhip evil ſpirits, affords greater ſecurity than this. It is indeed ſhocking to think that demons ſhould be worſhipped, while deities, who are regarded as being all benevolence, are treated with contempt: And it has been aſked, If the influence of ſuch religious ſentiments on the moral practice of the idolaters muſt not naturally be, to cauſe them to treat their friends and benefactors with ingratitude, and to humble themſelves with mean ſubmiſſion before a powerful enemy?

They do not appear to have produced ſuch effects on the morality of the ſavages by whom they were entertained. The benevolent deities were neglected, only becauſe their benevolence was neceſſary. A voluntary favour merits a grateful return: a deſigned injury provokes reſentment. But when you become, by accident, the inſtrument of any man's good fortune, the world will ſcarce conſider him as owing you any obligation: the ſtone which bruiſes your foot excites only a momentary emotion of reſentment. Thoſe gods who could not avoid doing good to men might not receive a profuſion of thanks for their ſervices; and yet a favour conferred by an human benefactor commands the warmeſt gratitude. But thoſe rude tribes appear to have had ſo much wiſdom as to confer a leſs abſolute malice on their malevolent deities, than the benevolence which they attributed to their more amiable order of ſuperior beings: though the latter could not poſſibly do them any thing but good, and that conſtantly; yet the former were not under an equally indiſpenſable neceſſity of perſevering in depreſſing them under calamities. On their malevolent deities they conferred a freedom of agency which they denied to the benevolent. No wonder, then, that they were more aſſiduous in paying their court to the one than to the other. They might with as much propriety have thought of being grateful to the boar or hog whoſe fleſh ſupported them, as to deities who were always benevolent, becauſe they could not poſſibly be otherwiſe. Though negligent of ſuch deities this can ſcarce be thought to have had any tendency to render them ungrateful to benefactors like themſelves. And yet, it muſt not be diſſembled, that the American Indians, among whom ſuch religious ſentiments have been found to prevail, are ſaid to be very little ſenſible to the emotions of gratitude. An Indian receives a preſent without thinking of making any grateful acknowledgments to the beſtower. He pleaſes his fancy or gratifies his appetite with what you have given, without ſeeming to conſider himſelf as under the ſmalleſt obligation to you for the gift.

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It may be doubted, however, whether this ſpirit of ingratitude originates from, or is only collateral with, that indifference which refuſes adoration and worſhip to the benevolent divinities. If the former be actually the caſe, we muſt acknowledge that thoſe religious notions which we now conſider, though preferable to general atheiſm, are in this reſpect unfriendly to virtue. But if the Indians may be thought to owe the ingratitude for which they are diſtinguiſhed to the opinion which they entertain of the exiſtence of a benevolent order of deities, whoſe benevolence is neceſſary and involuntary, their ideas of the nature of their malevolent demons do not appear to have produced equal effects on their moral ſentiments. However ſubmiſſive to thoſe dreaded beings, they are far from ſhowing the ſame tame and cowardly ſubmiſſion to their human enemies: towards them they ſeem rather to adopt the ſentiments of their demons. Inveterate rancour and brutal fury, inhuman cruelty and inconceivable cunning, are diſplayed in the hoſtilities of tribes at war; and we know not, after all, if even theſe ſentiments do not owe ſomewhat of their force to the influence of religion.

Yet let us remember that theſe ſame Indians have not been always repreſented in ſo unamiable a light; or, at leaſt, other qualities have been aſcribed to them which ſeem to be inconſiſtent with thoſe barbarous diſpoſitions. They have been deſcribed as peculiarly ſuſceptible of conjugal and parental love; and he who is ſo cannot be deſtitute of virtue.

2. But leaving the religion of ſavages, of which very little is known with certainty, let us proceed to examine what is the natural influence of that mixed ſyſtem of theology which repreſents to the imagination of men a number of ſuperior and inferior divinities, actuated by the ſame paſſions and feelings with themſelves, and often making uſe of their ſuperior power and knowledge for no other purpoſe but to enable them to violate the laws of moral order with impunity. This is the celebrated polytheiſm of the Greeks and Romans, and moſt other nations of antiquity (ſee Polytheism). Could its influence be favourable to virtue?

21 The influence of Greek and Roman polytheiſm.

At a firſt view every perſon will readily declare, that ſuch a ſyſtem muſt have been friendly to profligacy. If you commit the government of the univerſe, and the inſpection of human ſociety, to a ſet of beings who are often

22 Apparently friendly to profligacy;

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often disposed to regard vice with a no less favourable eye than virtue, and who, though there be an established order by which virtue is discriminated from vice, and right from wrong, yet scrupule not to violate that order in their own conduct; you cannot expect them to require in you a degree of rectitude of which they themselves appear incapable. A Mercury will not discourage the thievish arts of the trader; a Bacchus and a Venus cannot frown upon debauchery; Mars will behold with savage delight all the cruelties of war. The Thracians indeed, one of the most barbarous nations of antiquity, whose ferocity was little if at all inferior to that of the Indians who had been distinguished as cannibals, was the favourite nation of Mars; among whom stood his palace, to which he repaired when about to mount his chariot, and arm himself for battle. Even Jupiter, who had been guilty of so many acts of tyrannical caprice, had been engaged in such a multitude of amorous intrigues, and seemed to owe his elevated station as monarch of the sky, not to superior goodness or wisdom, but merely to a superior degree of brutal force, could not be feared as the avenger of crimes, or revered as the impartial rewarder of virtues.

23 But when contrasted with atheism its effects were favourable:

That this system had a pernicious effect on morals, and that, as compared with pure theism, it was injurious to society, cannot be denied; but yet, when contrasted with atheism, it was not without its favourable effects. It was so connected with the order of society, that, without its support, that order could scarce have been maintained. The young rake might perhaps justify himself by the example of Jupiter, or Apollo, or some other amorous divinity; the frail virgin or matron might complain of Cupid, or boast of imitating Venus; and the thief might practise his craft under the patronage of Mercury: But if we take the whole system together, if we consider with what views those deities were publicly worshipped, what temples were raised, what rites instituted, what sacrifices offered, and what *feriæ* consecrated; we shall perhaps find it necessary to acknowledge that the general effects even of that mixed and incoherent system of polytheism which prevailed among the Greeks and Romans were favourable to society. To state a particular instance; the *ancilia* of Mars and the fire of Vesta were thought to secure the perpetuity of the Roman empire. As long as the sacred *ancile*, which had been dropped from heaven for that benevolent purpose, was safely preserved in those holy archives in which it had been deposited; and as long as the sacred fire of Vesta was kept burning, without being once extinguished, or at least suffered to remain for an instant in that state; so long was Rome to subsist and flourish. And, however simple and absurd the idea which connected the prosperity of a nation with the preservation of a piece of wood in a certain place, or with the constant blazing of a flame upon an hearth; yet no fact can be more certain, than that the patriotism and enthusiastic valour of the Romans, which we so much extol and admire, were, in many instances, owing in no inconsiderable degree to the veneration which they entertained for the *ancilia* and the vestal fire.

24 As is proved by a numerous series of facts, &c.

A numerous series of facts occur in the Roman history, which show the happy effects of their religious opinions and ceremonies on their sentiments concerning social order and the public welfare. How powerful was the influence of the *sacramentum* administered to the soldiers when they enlisted in the service of their country? The promises made, the idea of the powers invoked, and the rites performed on that occasion, produced so deep and so awful an impression on their minds, that do danger, nor distress, nor discontent could prompt them to violate their engagements. The responses of the oracles, too, though the dictates of deceit and imposture, were often of singular service to those to whom they were uttered; when they inspired the warrior, as he marched out to battle, with the confidence of success, they communicated to him new vigour, and more heroic valour, by which he was actually enabled to gain or at least to deserve, the success which they promised. Again, when in times of public distress, the augur and the priest directed some games to be celebrated, certain sacrifices to be offered, or some other solemnities to be performed, in order to appease the wrath of the offended deities; it is plain that the means were not at all suited to accomplish the end proposed by them; yet still they were highly beneficial. When the attention of the whole people was turned entirely to those solemnities by which the wrath of heaven was to be averted, they were roused from that despondency under which the sense of the public distress or danger might have otherwise caused them to sink: the public union was at the same time more closely cemented, and the hearts of the people knit together; and when persuaded, that by propitiating the gods they had removed the cause of their distress, they acquired such calmness and strength of mind as enabled them to take more direct and proper measures for the safety of the state.

Could we view the ancient Greeks and Romans acting in public or in private life under the influence of that system of superstition which prevailed among them; could we perceive how much it contributed to the maintenance of civil order; could we behold Numa and Lycurgus establishing their laws, which would otherwise have met with a very different reception under the sanction of divinities; could we observe all the beneficial effects which arose to communities from the celebration of religious ceremonies—we should no longer hesitate to acknowledge, that those principles in the human heart by which we are susceptible of religious sentiments, are so eminently calculated to promote the happiness of mankind, that even when perverted and abused, their influence is still favourable.

25 Their notion of a future state of retribution incorrect;

The ideas which prevailed among the nations of the heathen world concerning a future state of retribution were, it must be confessed, not very correct. Some of the poets, we believe, have represented them in no unfair light: both Homer and Virgil have conducted their heroes through the realms of Pluto, and have taken occasion to unfold to us the secrets of those dreary abodes. The scenes are wild and fanciful; the rewards of the just and virtuous are of no very refined or dignified nature: and of the punishments inflicted on the guilty, it is often hard to say for what ends they could be inflicted; whether to correct and improve, or for the gratification of revenge or whim: they are often so whimsical and unsuitable, that they cannot with any degree of propriety be ascribed to any cause but blind chance or wanton caprice. A great dog with three tongues, a peevish old boatman with a leaky ferry-boat, demanding

Religion. manding his freight in a ſurly tone, and an uxorious monarch, are objects too familiar and ludicrous not to degrade the dignity of thoſe awful ſcenes which are repreſented as the manſions of the dead, and to prevent them from making a deep enough impreſſion on the imagination. The actions and qualities, too, for which departed ſpirits were admitted into Elyſium, or doomed to the regions of ſuffering, were not always of ſuch a nature as under a well-regulated government on earth would have been thought to merit reward, or to be worthy of puniſhment. It was not always virtue or wiſdom which conducted to the Elyſian fields, or gained admiſſion into the ſociety of the immortal gods.—Ganimede was for a very different reaſon promoted to be the cup-bearer of Jove; and Hercules and Bacchus could not ſurely plead that any merits of that kind entitled them to ſeats in the council, and at the banquets of the immortals. That doctrine, likewiſe, which repreſented mortals as hurried by fate to the commiſſion of crimes, which they could no more abſtain from committing than the ſword can avoid to obey the impulſe of a powerful and furious arm plunging it into the breaſt of an unreſiſting antagoniſt, could not but produce effects unfavourable to virtue; and it afforded a ready excuſe for the moſt extravagant crimes.

26 But nevertheleſs favourable to virtue and moral order.

Yet, after all, he who attentively conſiders the ideas of the Greeks and Romans concerning the moral government of the world and a future ſtate of rewards and puniſhments, will probably acknowledge, that their general influence muſt have been favourable to virtue and moral order. Allow them to have been incorrect and daſhed with abſurdity; ſtill they repreſent puniſhments prepared for ſuch qualities and actions as were injurious to the welfare of ſociety; whilſt, for thoſe qualities which rendered men eminently uſeful in the world, they hold forth a reward. Though incorrect, their ideas concerning a future ſtate were exceedingly diſtinct; they were not vague or general, but ſuch as might be readily conceived by the imagination, in all their circumſtances, as really exiſting. When a man is told that for ſuch a deed he will be put to death, he may ſhudder and be alarmed, and think of the deed as what he muſt by no means commit; but place before him the ſcene and the apparatus for his execution, call him to behold ſome other criminal mounting the ſcaffold, addreſſing his laſt words in a wild ſcream of deſpair to the ſurrounding ſpectators, and then launching into eternity—his horror of the crime, and his dread of the puniſhment, will now be much more powerfully excited. In the ſame manner, to encourage the ſoldier marching out to battle, or the mariner ſetting ſail under the proſpect of a ſtorm, promiſe not, merely in general terms, a liberal reward; be ſure to ſpecify the nature of the reward which you mean to beſtow; deſcribe it ſo as that it may take hold on the imagination, and may riſe in oppoſition to the images of death and danger with which his courage is to be aſſailed.

If theſe phenomena of the human mind are fairly ſtated, if it be true that general ideas produce no very powerful effects on the ſentiments and diſpoſitions of the human heart, it muſt then be granted, that though the ſcenes of future reward and puniſhment, which the heathens conſidered as prepared for the righteous and the wicked, were of a ſomewhat motley complexion; yet ſtill, as they were diſtinct and even minute draughts, they muſt have been favourable to virtue, and contributed in no inconſiderable degree to the ſupport of civil order. Religion.

27 The notion of deities peopling all nature of a ſalutary tendency when compared with atheiſm.

Another thing of which we may take notice under this head, is the vaſt multiplicity of deities with which the Greek and Roman mythology peopled all the regions of nature, flocks and fields, and woods and oaks, and flowers, and many much more minute objects, had all their guardian deities. Theſe were ſomewhat capricious at times, it is true, and expected to have attention paid them. But yet the faithful ſhepherd, and the induſtrious farmer, knew generally how to acquire their friendſhip; and in the idea of deities enjoying the ſame ſimple pleaſures, partaking in the ſame labours, protecting their poſſeſſions, and bringing forward the fruits of the year, there could not but be ſomething of a very pleaſing nature, highly favourable to induſtry, which would animate the labours, and cheer the feſtivals, of the good people who entertained ſuch a notion; nay, would diffuſe a new charm over all the ſcenes of the country, even in the gayeſt months of the year.

From all of theſe particular obſervations, we think ourſelves warranted to conclude, that notwithſtanding the mixed characters of the deities who were adored by the celebrated nations of antiquity; though they are in many inſtances repreſented as conſpicuous for vices and frolics; however vain, abſurd, and morally criminal, ſome of the rites by which they were worſhipped may have been, and however incorrect the notions of the heathens concerning the moral government of the univerſe and a future ſtate of retribution; yet ſtill, after making a juſt allowance for all theſe imperfections, the general influence of their religious ſyſtem was rather favourable than unfavourable to virtue and to the order and happineſs of ſociety.

28 The advantage of eſtabliſhing laws, &c. on the baſis of religion.

It was not without good reaſon that the earlieſt legiſlators generally endeavoured to eſtabliſh their laws and conſtitutions on the baſis of religion; government needs the ſupport of opinion; the governed muſt be impreſſed with a belief that the particular eſtabliſhment to which they are required to ſubmit, is the beſt calculated for their ſecurity and happineſs, or is ſupported on ſome ſuch ſolid foundation, that it muſt prove impoſſible for them to overturn it, or is connected with ſome awful ſanction, which it would be the moſt heinous impiety to oppoſe. Of theſe ſeveral notions, the laſt will ever operate on moſt men with the moſt ſteady influence. We are frequently blind to our own intereſt; even when eager for the attainment of happineſs, we often refuſe to take the wiſeſt meaſures for that end. The great bulk of the people in every community are ſo little capable of reaſoning and foreſight, that the public miniſter who ſhall moſt ſteadily direct his views to the public good will often be the moſt unpopular. Thoſe laws, and that ſyſtem of government, which are the moſt beneficial, will often excite the ſtrongeſt popular diſcontents. Again, it is not always eaſy to perſuade people that your power is ſuperior to theirs, when it is not really ſo. No one man will ever be able to perſuade a thouſand that he is ſtronger than they all together; and therefore, in order to perſuade one part of his ſubjects or army that it is abſolutely neceſſary for them to ſubmit to him, becauſe any attempts to reſiſt his power would prove ineffectual, a monarch or general muſt take care firſt to perſuade another part that it is for their intereſt

[illegible] to him; or to impress the whole with a belief that, weak and pitiful as he himself may appear, when viewed singly in opposition to them all, yet by the assistance of some awful invisible beings, his friends and protectors, he is so powerful, that any attempts to resist his authority must prove presumptuous folly. Here, then, the aid of religion becomes requisite. Religious sentiments are the most happily calculated to serve this purpose. Scarce ever was there a society formed, a mode of government established, or a code of laws framed and enacted, without having the religious sentiments of mankind, their notions of the existence of superior invisible beings, and their hopes and fears from those beings, as its fundamental principle. Now, we believe, it is almost universally agreed, that even the rudest form of society is more favourable to the happiness of mankind, and the dignity of the human character, than a solitary and savage state. And if this, with what we have asserted concerning religion as the basis of civil government, be both granted, it will follow, that even the most imperfect religious notions, the most foolish and absurd rites, and the wildest ideas that have been entertained concerning the moral government of the universe by superior beings, and a future state of retribution, have been more advantageous than atheism to the happiness and virtue of human life. We have already granted, nor can it be denied, indeed, that many of the religious opinions which prevailed among the ancient heathens, did contribute, in some degree, to the depravation of their morals: and all that we argue for is, that on a comparative view of the evil and the good which resulted from them, the latter must appear more than adequate to counterbalance the effects of the former.

29 The infinite advantage of a pure, rational, and true religion.

But if such be the natural tendency of those principles by which the human heart is made susceptible of religious sentiments, that even enthusiasm and absurd superstition are productive of beneficial effects more than sufficient to counterbalance whatever is malignant in their influence on society—surely a pure rational religion, the doctrines of which are founded in undeniable truth, and all the observances which it enjoins, calculated to promote by their direct and immediate effects some useful purposes, must be in a very high degree conducive to the dignity and the happiness of human nature. Indeed one collateral proof of the truth of any religion, which must have very considerable weight with all who are not of opinion that the system of the universe has been produced and hitherto maintained in order and existence by blind chance, will be its having a stronger and more direct tendency than others to promote the interests of moral virtue and the happiness of mankind in the present life. Even the testimony of thousands, even miracles, prophecies, and the sanction of remote antiquity, will scarce have sufficient weight to persuade us, that a religion is of divine origin, if its general tendency appear to be rather unfavourable than advantageous to moral virtue.

30 Comparative view of the effects of different religious systems.

III. We shall therefore, in the next place, endeavour to determine, from a comparative view of the effects produced on the character and circumstances of society by the most eminent of these various systems of religion which have been in different ages or in different countries established in the world, how far any one of them has in this respect the advantage over the rest; and, if the utility of a system of religion were to be received as a test of its truth, what particular system might, with the best reason, be received as true, while the rest were rejected.

Religion.

1st, The principle upon which we here set out is, that all, or almost all, systems of religion with which we are acquainted, whether true or false, contribute more or less to the welfare of society. But as one field is more fruitful, and one garden less overgrown with weeds than another; so, in the same manner, one system of religious opinions and ceremonies may be more happily calculated than others to promote the truest interests of mankind. In opposition to those philosophers who are so vehement in their declamations against the inequality of ranks, we have ever been of opinion, that refinement and civilization contribute to the happiness of human life. The character of the solitary savage is, we are told, more dignified and respectable than that of the philosopher and the hero, in proportion as he is more independent. He is indeed more independent; but his independence is that of a stone, which receives no nourishment from the earth or air, and communicates none to animals or vegetables around it. In point of happiness, and in point of respectability, we cannot hesitate a moment, let philosophers say what they will, to prefer a virtuous, enlightened, and polished citizen to any of the rudest savages, the least acquainted with the restraints and the sympathies of social life, that wander through the wild forests of the western world. But if we prefer civilization to barbarism, we must admit, that in this view Christianity has the advantage over every other religious system which has in any age or country prevailed among men; for nowhere has civilization and useful science been carried to such a height as among Christians.

31 Advantage of civilization.

32 And therefore of Christianity.

33 View of the various religious notions of Pagan nations.

It is not, indeed, in any considerable degree that the absurd superstitions of those rude tribes, who can scarce be said to be formed into any regular society, can contribute to their happiness. Among them the faculty of reason is but in a very low state; and the moral principle usually follows the improvement or the depression of the reasoning faculty. Their appetites and merely animal passions are almost their only principles of action: their first religious notions, if we suppose them not to be derived from revelation or tradition, are produced by the operation of gratitude, or grief, or hope, or fear, upon their imaginations. And to these, however wild and fanciful, it is not improbable that they may owe some of their earliest moral notions. The idea of superior powers naturally leads to the thought that those powers have some influence on human life. From this they will most probably proceed to fancy one set of actions agreeable, another offensive, to those beings to whom they believe themselves subject. And this, perhaps, is the first distinction that savages can be supposed to form between actions, as right or wrong, to be performed or to be avoided. But if this be the case, we must acknowledge that the religious notions of the savage, however absurd, contribute to elevate his character, and to improve his happiness, when they call forth the moral principle implanted in his breast.

But if the social state be preferable to a state of wild and solitary independence, even the rude superstitions of unenlightened tribes of savages are in another respect beneficial to those among whom they prevail. They usually

Religion. uſually form, as has been already obſerved under this article, the baſis of civil order. Religious opinions may lead the great body of the community to reverence ſome particular ſet of inſtitutions, ſome individual, or ſome family, which are repreſented to them as peculiarly connected with the gods whom they adore. Under this ſanction ſome form of government is eſtabliſhed; they are taught to perform ſocial duties, and rendered capable of ſocial enjoyments. Not only Numa and Lycurgus, but almoſt every legiſlator who has ſought to civilize a rude people, and reduce them under the reſtraints of legal government, have endeavoured to impreſs their people with an idea that they acted with the approbation, and under the immediate direction, of ſuperior powers. We cannot but allow that the rude ſuperſtitions of early ages are productive of theſe advantages to ſociety; but we have already acknowledged, and it cannot be denied, that they are alſo attended with many unhappy effects. When we view the abſurdities intermixed with the ſyſtems of religion which prevailed among moſt of the nations of antiquity, we cannot help lamenting that ſo noble a principle of human nature as our religious ſentiments ſhould be liable to ſuch groſs perverſion; and when we view the effects which they produce on the morals of mankind, and the forms of ſociety, though we allow them to have been upon the whole rather beneficial than hurtful, yet we cannot but obſerve, that their unfavourable effects are by far more numerous than if they had been better directed. What unhappy effects, for inſtance, have been produced by falſe notions concerning the condition of human ſouls in a future ſtate. Various nations have imagined that the ſcenes and objects of the world of ſpirits are only a ſhadowy repreſentation of the things of the preſent world. Not only the ſouls of men, according to them, inhabit thoſe regions; all the inferior animals and vegetables, and even inanimate bodies that are killed or deſtroyed here, are ſuppoſed to paſs into that viſionary world; and, exiſting there in unſubſtantial forms, to execute the ſame functions, or ſerve the ſame purpoſes, as on earth. Such are the ideas of futurity that were entertained by the inhabitants of Guinea. And by theſe ideas they were induced, when a king or great man died among them, to provide for his comfortable accommodation in the world of ſpirits, by burying with him meat and drink for his ſubſiſtence, ſlaves to attend and ſerve him, and wives with whom he might ſtill enjoy the pleaſures of love. His faithful ſubjects vied with each other in offering, one a ſervant, another a wife, a third a ſon or daughter, to be ſent to the other world in company with the monarch, that they might there be employed in his ſervice. In New Spain, in the iſland of Java, in the kingdom of Benin, and among the inhabitants of Indoſtan, ſimilar practices on the ſame occaſion, owing no doubt to ſimilar notions of futurity, have been prevalent. But ſuch practices as theſe cannot be viewed with greater contempt on account of the opinions which have given riſe to them, than horror on account of their unhappy effects on the condition of thoſe among whom they prevail. A lively impreſſion of the enjoyments to be obtained in a future ſtate, together with ſome very falſe or incorrect notions concerning the qualities or actions which were to entitle the departing ſoul to admiſſion into the ſcene of thoſe enjoyments, is ſaid to have produced equally unhappy effects among the Japaneſe. They not only bribed their prieſts to ſolicit for them; but looking upon the enjoyments of the preſent life with diſguſt or contempt, they uſed to daſh themſelves from precipices, or cut their throats, in order to get to paradiſe as ſoon as poſſible. Various other ſuperſtitions ſubſiſting among rude nations might here be enumerated, as inſtances of the perverſion of the religious principles of the human heart, which render them injurious to virtue and happineſs. The auſterities which have been practiſed, chiefly among rude nations, as means of propitiating ſuperior powers, are eſpecially worthy of notice.—When the favourite idol of the Banians is carried in ſolemn proceſſion, ſome devotees proſtrate themſelves on the ground, that the chariot in which the idol is carried may run over them; others, with equal enthuſiaſm, daſh themſelves on ſpikes faſtened on purpoſe to the car. Innumerable are the ways of torture which have been invented and practiſed on themſelves by men ignorantly ſtriving to recommend themſelves to the favour of heaven. Theſe we lament as inſtances in which religious ſentiments have been ſo ill directed by the influence of imagination, and unenlightened erring reaſon, as to produce unfavourable effects on the human character, and oppoſe the happineſs of ſocial life.—Though we have argued, that even the moſt abſurd ſyſtems of religion that have prevailed in the world, have been upon the whole rather beneficial than injurious to the dignity and happineſs of human nature; yet if it ſhall not appear, as we proceed farther in our comparative view of the effects of religion on ſociety, that others have been attended with happier effects than theſe ſuperſtitions which belong to the rude ages of ſociety, we may ſcarce venture to brand the infidel with the appellation of *fool*, for refuſing to give his aſſent to religious doctrines, or to act under their influence. Religion.

2d. The polytheiſm of the Greeks and Romans, and other heathen nations in a ſimilar ſtate of civilization, we have already conſidered as being, upon the whole, rather favourable than unfavourable to virtue; but we muſt not partially conceal its defects. The vicious characters of the deities which they worſhipped, the incorrect notions which they entertained concerning the moral government of the univerſe and a future retribution, the abſurdities of their rites and ceremonies, and the criminal practices which were intermixed with them, muſt have altogether had a tendency to pervert both the reaſoning and the moral principles of the human mind. The debaucheries of the monarch of the gods, and the fidelity with which his example in that reſpect was followed by the whole crowd of the inferior deities, did, we know, diſpoſe the devout heathen, when he felt the ſame paſſions which had aſſerted their power over the gods, to gratify them without ſcruple. It is a truth, however, and we will not attempt to deny or conceal it, that the genius of the polytheiſm of the Greeks and Romans was friendly to the arts; to ſuch of them eſpecially as are raiſed to excellence by the vigorous exertion of a fine imagination; muſic, poetry, ſculpture, architecture, and painting, all of theſe arts appear to have been conſiderably indebted for that perfection to which they attained, eſpecially among the Greeks, to the ſplendid and fanciful ſyſtem of mythology which was received among that ingenious people.—

But

Religion. But we cannot give an equally favourable account of its influence on the ſciences. There was little in that ſyſtem that could contribute to call forth reaſon. We may grant indeed, that if reaſon can be ſo ſhocked with abſurdity as to be roused to a more vigorous exertion of her powers, and a more determined aſſertion of her rights in conſequence of ſurveying it; in that caſe this ſyſtem of mythology might be favourable to the exerciſe and improvement of reaſon; but otherwiſe.

The connection of paganiſm with morality was too inconſiderable for it to produce any very important effects on the morals of its votaries. Sacrifices and prayers, and temples and feſtivals, not purity of heart and integrity of life, were the means preſcribed for propitiating the favour of the deities adored by the Pagans. There were other means, too, beſides true heroiſm and patriotiſm, of gaining admiſſion into the Elyſian fields, or obtaining a ſeat in the council of the gods. Xenophon, in one of the moſt beautiful parts of his Memoirs of Socrates, repreſents Hercules wooed by Virtue and Pleaſure in two fair female forms, and deliberating with much anxiety which of the two he ſhould prefer. But this is the fiction of a philoſopher deſirous to improve the fables of antiquity in ſuch a way as to render them truly uſeful. Hercules does not appear, from the tales which are told us of his adventures, to have been at any ſuch pains in chooſing his way of life. He was received into the palace of Jove, without having occaſion to plead that he had through life been the faithful follower of that goddeſs to whom the philoſopher makes him give the preference; his being the ſon of Jove, and his wild adventures, were ſufficient without any other merits to gain him that honour. The ſame may be ſaid concerning many of the other demi-gods and heroes who were advanced to heaven, or conveyed to the bleſsful fields of Elyſium. And whatever might be the good effects of the religion of Greece and Rome in general upon the civil and political eſtabliſhments, and in ſome few inſtances on the manners of the people, yet ſtill it muſt be acknowledged to have been but ill calculated to impreſs the heart with ſuch principles as might in all circumſtances direct to a firm, uniform, tenor of virtuous conduct.

But after what has been ſaid on the character of this religion elſewhere (ſee Polytheism), and in the ſecond part of this article, we cannot without repetition enlarge farther on it here. Of the Jewiſh religion, however, we have as yet ſaid little, having on purpoſe reſerved to this place whatever we mean to introduce under the article, concerning its influence on ſociety.

34 View of Judaiſm.

3d, When we take a general view of the circumſtances in which the Jewiſh religion was eſtabliſhed, the effects which it produced on the character and fortune of the nation, the rites and ceremonies which it enjoined, and the ſingular political inſtitutions to which it gave a ſanction, it may perhaps appear hard to determine, whether it were upon the whole more or leſs beneficial to ſociety than the polytheiſm of the Egyptians, Greeks, and Romans. But if ſuch be the judgement which preconceived prejudices, or an haſty and careleſs view, have induced ſome to form of this celebrated ſyſtem; there are others who, with equal keenneſs, and ſounder reaſoning, maintain, that it was happily calculated, not only to accompliſh the great deſign of preparing the way for the promulgation of the Goſpel, Religion. but likewiſe to render the Jews a more refined and virtuous people, and a better regulated community, than any neighbouring nation. In the firſt place, the attributes of the Deity were very clearly exhibited to the Jews in the eſtabliſhment of their religion. The miracles by which he delivered them from ſervitude, and conducted them out of Egypt, were ſtriking demonſtrations of his power; that condeſcenſion with which he forgave their repeated acts of perverſeneſs and rebellion, was a moſt convincing proof of his benevolence; and the impartiality with which the obſervance and the violation of his laws were rewarded and puniſhed, even in the preſent life, might well convince them of his juſtice. A part of the laws which he dictated to Moſes are of eternal and univerſal obligation; others of them were local and particular, ſuited to the character of the Jews, and their circumſtances in the land of Canaan. The Jewiſh code, taken altogether, is not to be conſidered as a complete ſyſtem of religion, or laws calculated for all countries and all ages of ſociety. When we conſider the expediency of this ſyſtem, we muſt take care not to overlook the deſign for which the Jews are ſaid to have been ſeparated from other nations, the circumſtances in which they had lived in Egypt, the cuſtoms and manners which they had contracted by their intercourſe with the natives of that country, the manner in which they were to acquire to themſelves ſettlements by extirpating the nations of Canaan, the rank which they were to hold among the nations of Syria and the adjacent countries, together with the difficulty of reſtraining a people ſo little civilized and enlightened from the idolatrous worſhip which prevailed among their neigbours: All theſe circumſtances were certainly to be taken into account; and had the legiſlator of the Jews not attended to them, his inſtitutions muſt have remained in force only for a ſhort period; nor could they have produced any laſting effects on the character of the nation. With a due attention to theſe circumſtances, let us deſcend to an examination of particulars.

35 The Sabbath.

Although in every religion or ſuperſtition that has prevailed through the world, we find one part of its inſtitutions to conſiſt in the enjoining of certain feſtivals to be celebrated by relaxation from labour, and the performance of certain ceremonies in honour of the gods; yet in none, or almoſt none beſides the Jewiſh, do we find every ſeventh day ordained to be regularly kept holy. One great end which the legiſlator of the Jews had in view in the inſtitution of the Sabbath was, to impreſs them with a belief that God was the maker of the univerſe. In the early ages of the world a great part of mankind imagined the ſtars, the ſun, the moon, and the other planets, to be eternal, and conſequently objects highly worthy of adoration. To convince the Iſraelites of the abſurdity of this belief, and prevent them from adopting that idolatry, Moſes taught them, that thoſe conſpicuous objects which the Gentile nations regarded as eternal, and endowed with divine power and intelligence, were created by the hand of God; who, after bringing all things out of nothing, and giving them form, order, and harmony, in the ſpace of ſix days, reſted on the ſeventh from all his works. Various paſſages in the Old Teſtament concur to ſhow, that this was one great end of the inſtitution of the

Sabbath.

Religion. Sabbath. The obſervance of the Sabbath, and deteſtation of idolatrous worſhip, are frequently inculcated together; and, again, the breach of the Sabbath, and the worſhip of idols, are uſually reprobated at the ſame time. Another good reaſon for the inſtitution of a Sabbath might be, to remind the Jews of their deliverance from bondage, to inſpire them with humanity to ſtrangers and domeſtics, and to mitigate the rigours of ſervitude.

36 And other feſtivals.

The purpoſes for which the other feſtivals of the Jewiſh religion were inſtituted appear alſo of ſufficient importance. The great miracle, which, after a ſeries of other miracles, all directed to the ſame end, finally effected the deliverance of the Jews out of Egypt; and their actual departure from that land of ſervitude, might well be commemorated in the feaſt of the paſſover. To recal to the minds of poſterity the hiſtory of their anceſtors, to impreſs them with an awful and grateful ſenſe of the goodneſs and greatneſs of God, and to make them think of the purpoſes for which his almighty power had been ſo ſignally exerted, were ſurely good reaſons for the inſtitution of ſuch a feſtival. The feaſt of Pentecoſt celebrated the firſt declaration of the law by Moſes, in the ſpace of fifty days after the feaſt of the paſſover. It ſerved alſo as a day of ſolemn thankſgiving for the bleſſings of a plenteous harveſt. On the feaſt of tabernacles, they remembered the wanderings of their anceſtors through the wilderneſs, and expreſſed their gratitude to heaven for the more comfortable circumſtances in which they found themſelves placed. The feaſt of new moons ſerved to fix their kalendar, and determine the times at which the other feſtivals were to be celebrated; on it trumpets were ſounded, to give public notice of the event which was the cauſe of the feſtival; no ſervile works were performed, divine ſervice was carefully attended, and the firſt fruits of the month were offered to the Lord. The Jewiſh legiſlator limited his feſtivals to a very ſmall number, while the heathens devoted a conſiderable part of the year to the celebration of theirs. But we perceive the occaſions upon which the Jewiſh feſtivals were celebrated to have been of ſuitable importance; whereas thoſe of the heathens were often celebrated on trifling or ridiculous occaſions. Piety and innocent recreation ſhared the Jewiſh feſtival; the feſtivals of the heathens were chiefly devoted to debauchery and idleneſs.

37 The ſabbatical year, jubilee, and laws of uſury.

The Hebrews had other ſolemn ſeaſons of devotion beſides the weekly Sabbath and theſe annual feſtivals. Every ſeventh year they reſted from labour: they were then neither to plough, to ſow, nor to prune; and whatever the earth produced ſpontaneouſly that year belonged rather to ſtrangers, orphans, and the poor, than to the proprietors of the ground. On this year inſolvent debtors were diſcharged from all debts contracted by purchaſing the neceſſaries of life: and the great end of this releaſe from debts contracted during the preceding ſix years, appears to have been to prevent the Hebrew from flying to the Gentiles and forſaking his religion when embarraſſed in his circumſtances. None but native Iſraelites and proſelytes of righteouſneſs were admitted to this privilege; it was refuſed to ſtrangers, and even to proſelytes of the gate. The jubilee was a feſtival to be celebrated every fiftieth year. It produced the ſame effects with the ſabbatical year as to reſt from labour and the diſcharge of debts; with this addition, that on the year of the jubilee ſlaves obtained their freedom, and the lands reverted to the old proprietors. On the year of the jubilee, as on the ſabbatical year, the lands were to reſt uncultivated, and lawſuits were now to terminate. The chief deſign of this inſtitution appears to have been, to preſerve the order of ranks and property originally eſtabliſhed in the Hebrew ſtate. None but Iſraelites or circumciſed converts could enjoy the benefit of this inſtitution; nor could even theſe hope to regain their eſtates on the year of the Jubilee, if they ſold them for any other purpoſe but to ſupply their neceſſities. The law relative to uſury was evidently founded on the ſame plan of polity with reſpect to property. To almoſt any other nation ſuch a law, it muſt be confeſſed, would have been unſuitable and unjuſt: but as the Jews were not deſigned for a trading nation, they could have little occaſion to borrow, unleſs to relieve diſtreſs; and as an indulgence to people in ſuch circumſtances, the Jew was forbidden to exact uſury from his brother to whom he had lent money. Religion

38 Of clean and unclean beaſts, and the place of worſhip.

The Jewiſh legiſlator, we may well think, would be diſpoſed to adopt every proper method to prevent his nation from falling away into the idolatry of heathen nations. Probably one reaſon of the diſtinctions between *clean* beaſts which they were permitted to eat, and *unclean* beaſts, the eating of which they were taught to conſider as pollution, was to prevent them from convivial intercourſe with profane nations, by which they might be ſeduced to idolatry. We do not readily ſit down at table with people who are fond of diſhes which we regard with abhorrence. And if the Jews were taught to loathe the fleſh of ſome of thoſe animals which were among the greateſt delicacies of the Gentiles, they would naturally of conſequence avoid ſitting down at meat with them, either at their ordinary meals or at thoſe entertainments which they prepared in honour of their deities; and this we may with good reaſon conſider as one happy mean to preſerve them from idolatry. Beſides, the Jews were permitted, or rather injoined, to eat animals which the Gentiles reverenced as ſacred, and from which they religiouſly with-held all violence. Goats, ſheep, and oxen, were worſhipped in Egypt (ſee Polytheism and Pan); and ſeveral learned writers are of opinion, that Moſes directed his people to ſacrifice and eat certain of the favourite animals of the Egyptians, in order to remove from their minds any opinions which they might have otherwiſe entertained of the ſanctity of thoſe pretended deities. Many of the obſervances which Moſes injoined with regard to food, appear to have been intended to inſpire the Iſraelites with contempt for the ſuperſtitions of the people among whom they had ſo long ſojourned. They were to kill the animal which the Egyptians worſhipped; to roaſt the fleſh which that people ate raw; to eat the head, which they never ate; and to dreſs the entrails, which they ſet apart for divination. Theſe diſtinctions concurred with the peculiarities of their dreſs, language, government, cuſtoms, places, and times of worſhip, and even the natural ſituation of their country, by which they were in a maner confined and fortified on all ſides, to ſeparate them in ſuch a manner from neighbouring nations, that they might eſcape the infection of their idolatry. And if we reflect both on the deſign for which Providence ſeparated the Iſraelites from other

nations,

nations, and on the probability that, in the ſtate of ſociety in which mankind were during the earlier period of the Jewiſh hiſtory, the Jews, by mixing with other nations, would rather have been themſelves converted to idolatry, than have converted idolatrous nations to the worſhip of the one God; we cannot but be ſatisfied, that even this, however it may at firſt appear, was a hard, not a diſadvantageous ſtate; and in the author of their legislation wiſdom, not caprice.

39 Origin of the diſtinction of meats clean and unclean to the ſecularis in the Jewiſh law.

But not only in the diſtinctions of meats, and between clean and unclean animals, does the legislator of the Jews appear to have had in view to raiſe a barrier between them and other nations which might preſerve them from the contagion of idolatry—we muſt not err, perhaps, if we aſcribe many particulars of their worſhip to this deſign in the inſtitutor. The heathens had gods who preſided over woods, rivers, mountains, and valleys, and to each of theſe they offered ſacrifices, and performed other rites of worſhip in a ſuitable place. Sometimes the grove, ſometimes the mountain top, at other times the bank of the river or the brink of the ſpring, was the ſcene of their devotions. But as the unity of the divine nature was the truth the moſt earneſtly inculcated on the children of Iſrael; ſo in order to impreſs that truth on their minds with the more powerful efficacy, they were taught to offer their ſacrifices and other offerings only in one place, the place choſen by the Lord; and death was threatened to thoſe who dared to diſobey the command. To confirm this truth, one of the prophets intimates, that when idolatry ſhould be aboliſhed, the worſhip of God ſhould not be confined to Jeruſalem, but it would then be lawful to worſhip him anywhere.

40 Influence of the inſtitutions, &c. in impreſſing a reſpect for the Deity.

The whole inſtitutions and obſervances of the Jewiſh religion appear to have been deſigned and happily calculated to impreſs the minds of the people with veneration and reſpect for the Deity. All the feſtivals which either commemorated ſome gracious diſpenſation of his providence towards their anceſtors, or ſerved as days of thankſgiving for the conſtant returns of his goodneſs to thoſe who celebrated them, and all the other rites deſigned to fortify them againſt idolatry, ſerved at the ſame time to impreſs their hearts with awful reverence for the God of Jacob. Various other particulars in the inſtitutions of the Jewiſh economy appear to have been directed ſolely to that end. Into the moſt ſacred place, the Holy of Holies, none but the high prieſt was admitted, and he only once a year. No fire was uſed in ſacrifice but what was taken from the altar. Severe puniſhments were on various occaſions inflicted on ſuch as preſumed to intermeddle in the ſervice of the ſanctuary in a manner contrary to what the law had directed. All the laws reſpecting the character, the circumſtances, and the ſervices, of the prieſts and the Levites, appear plainly to have a ſimilar tendency.

In compliance with the notions of Deity which naturally prevailed among groſs and rude people, though no viſible object of worſhip was granted to the Jews, yet they were allowed in their wanderings through the wilderneſs to have a tabernacle or portable temple, in which the ſovereign of the univerſe ſometimes deigned to diſplay ſome rays of his glory. Incapable as they were of conceiving aright concerning the ſpiritual nature and the omnipreſence of the Deity, they might poſſibly have thought Jehovah careleſs and indifferent about them, had they been at no time favoured with a viſible demonſtration of his preſence. Religion.

41 Sacrifices and luſtrations.

The ſacrifices in uſe among the Gentiles in their worſhip of idols were permitted by the Jewiſh legiſlator; but he directed them to be offered with views very different from thoſe with which the Gentiles ſacrificed to their idols. Some of the ſacrifices of the Jewiſh ritual were deſigned to avert the indignation of the Deity; ſome to expiate offences and purify the heart; and all of them to abolith or remove idolatry. Luſtrations or ablutions entered likewiſe into the Jewiſh ritual; but theſe were recommended and enjoined by Moſes for purpoſes widely different from thoſe which induced the heathens to place ſo high a value upon them. The heathens practiſed them with magical and ſuperſtitious ceremonies; but in the Jewiſh ritual they were intended ſimply for the cleanſing away of impurities and pollutions.

42 Tendency of the theocracy and temporal ſanctions.

The theocratical form of government to which the Jews were ſubject, the rewards which they were ſure of receiving, and the puniſhments which they were equally liable to ſuffer in the preſent life, had a powerful effect to remove ſuperſtition and preſerve them from idolatry, as well as to ſupport all the ſocial virtues among them. They were promiſed a numerous offspring, a land flowing with milk and honey, long life, and victory over their enemies, on the condition of their paying a faithful obedience to the will of their heavenly Sovereign; plague, famine, diſeaſe, defeats, and death, were threatened as the puniſhments to be inflicted on thoſe who violated his laws: and theſe ſanctions, it muſt be allowed, were happily accommodated to the genius of a rude and carnal minded people, attentive only to preſent objects, and not likely to be influenced by remote and ſpiritual conſiderations.

43 Rites and prohibitions of leſs apparent utility.

There were other rites and prohibitions in the Moſaic law, which appear to have had but little connection with religion, morals, or policy. Theſe may be more liable to be objected againſt, as adding an unneceſſary weight to a burden which, though heavy, might yet have been otherwiſe borne in conſideration of the advantages connected with it. Even theſe, however, may perhaps admit of being viewed in a light in which they ſhall appear to have been in no way unfavourable to the happineſs of thoſe to whom they were enjoined. They appear to have had none of them an immoral tendency: all of them had, in all probability, a tendency to remove or prevent idolatry, or to ſupport, in ſome way or other, the religious and the civil eſtabliſhment to which they belonged.

44 The whole admirably calculated for the purpoſes intended.

From theſe views of the ſpirit and tendency of the Jewiſh religion, we may fairly conclude it to have been happily calculated to promote the welfare of ſociety. In comparing it with other religions, it is neceſſary to reflect on the peculiar purpoſes for which it was given; that its two principal objects were to preſerve the Jews a ſeparate people, and to guard them againſt the contagion of the ſurrounding idolatry. When theſe things are taken into conſideration, every candid mind acquainted with the hiſtory of ancient nations will readily acknowledge that the whole ſyſtem, though calculated indeed in a peculiar manner for them, was as happily adapted for the purpoſes for which it had been wiſely and graciouſly intended, as it is poſſible to imagine any ſuch

Religion. such a ſyſtem to be. It would be unhappy, indeed, if, on a compariſon of pure theiſm with polytheiſm, the latter, with all its abſurdities, ſhould be found more beneficial to mankind than the former. The theiſm of the Jews was not formed to be diſſeminated through the earth; that would have been inconſiſtent with the purpoſes for which it is ſaid to have been deſigned. But while the Jews were ſeparated by their religion from all other nations, and perhaps, in ſome degree, fixed and rendered ſtationary in their progreſs towards refinement, they were placed in circumſtances, in reſpect to laws, and government, and religion, and moral light, which might with good reaſon render them the envy of every other nation in the ancient world.

45 View of Chriſtianity.

IV. The Chriſtian religion next demands our attention. It is to be conſidered as an improvement of the Jewiſh, or a new ſuperſtructure raiſed on the ſame baſis. If the effects of the Jewiſh religion were beneficial to thoſe among whom it was eſtabliſhed, they were confined almoſt to them alone. But is the ſpirit of Chriſtianity equally pure and benignant? Is its influence equally beneficial and more diffuſive than that of Judaiſm? Does it really merit to have triumphed over both the theiſm of the Jews and the polytheiſm of the heathens?

46 The doctrines pure and rites ſimple.

If we conſider the doctrines and precepts of the Chriſtian religion, nothing can be more happily calculated to raiſe the dignity of human nature, and promote the happineſs of mankind. The happineſs of the individual is beſt promoted by the exerciſe of love and gratitude towards God, and reſignation to his providence; of humanity, integrity, and good will towards men; and by the due government of our appetites and paſſions. Social happineſs again proceeds from the members of ſociety entertaining a diſintereſted regard for the public welfare; being actively induſtrious each in his proper ſphere of exertion; and being ſtrictly juſt and faithful, and generouſly benevolent in their mutual intercourſe. The tenor of the Goſpel inculcates theſe virtues; it ſeems everywhere through the whole of the Chriſtian code to have been the great deſign of its Author to inſpire mankind with mild, benevolent, and peaceable diſpoſitions, and to form them to courteous manners. Chriſtianity again repreſents the Deity and his attributes in the faireſt light; even ſo as to render our ideas of his nature, and the manner in which he exerts his power, conſiſtent with the moſt correct principles of morality that can be collected from all the other religions that have prevailed in the earth, and from the writings of the moſt admired philoſophers. The ritual obſervances which Chriſtianity enjoins are few in number, eaſy to perform, decent, expreſſive, and edifying. It inculcates no duties but what are founded on the principles of human nature, and on the relation in which men ſtand to God, their Creator, Redeemer, and Sanctifier; and it preſcribes accurate rules for the regulation of the conduct. The aſſiſtance of the ſpirit of God is promiſed in this ſacred volume to thoſe who aſſiduouſly labour to diſcharge the duties which it enjoins; and it exhibits a ſtriking example of ſpotleſs purity, which we may ſafely venture to imitate. The goſpel teaches that worldly afflictions are incident to both good and bad men; a doctrine highly conducive to virtue, which conſoles us in diſtreſs, prevents deſpair, and encourages us to perſiſt firmly in our integrity under every difficulty and trial. Chriſtianity repreſents all men as children of the ſame God, and heirs of the ſame ſalvation, and levels all diſtinctions of rich and poor, as accidental and inſignificant in the ſight of him who rewards or puniſhes with impartiality according to the merits or demerits of his creatures. This doctrine is highly favourable to virtue, as it tends to humble the proud, and to communicate dignity of ſentiment to the lowly; to render princes and inferior magiſtrates moderate and juſt, gentle and condeſcending, to their inferiors. It farther requires huſbands to be affectionate and indulgent to their wives, wives to be faithful and reſpectful to their huſbands, and both to be true and conſtant to each other. Such is the purity of the Goſpel, that it forbids us even to harbour impure thoughts; it requires us to abandon our vices, however dear to us; and to the cautious wiſdom of the ſerpent it directs us to join the innocent ſimplicity of the dove. The Chriſtian diſpenſation, to prevent a perſeverance in immorality, offers pardon for the paſt, provided the offender forſake his vicious practices, with a firm reſolution to act differently in future. The ſanctions of the Goſpel have a natural tendency to exalt the mind above the paltry purſuits of this world, and to render the Chriſtian incorruptible by wealth, honours, or pleaſures. The true Chriſtian not only abſtains from injuſtice towards others, but even forgives thoſe injuries which he himſelf ſuffers, knowing that he cannot otherwiſe hope for forgiveneſs from God. Such are the precepts, ſuch the ſpirit, and ſuch the general tendency of the Goſpel. Even thoſe who refuſed to give credit to its doctrines and hiſtory have yet acknowledged the excellence of its precepts. They have acknowledged, that "no religion ever yet appeared in the world of which the natural tendency was ſo much directed to promote the peace and happineſs of mankind as the Chriſtian; and that the Goſpel of Chriſt is one continued leſſon of the ſtricteſt morality, of juſtice, benevolence, and univerſal charity." Theſe are the words of Bolingbroke, one of its keeneſt and moſt inſidious opponents. Without examining the effects of this religion on ſociety, we might almoſt venture to pronounce with confidence, that a religion, the precepts of which are ſo happily formed to promote all that is juſt and excellent, cannot but be in the higheſt degree beneficial to mankind. By reviewing the effects which it has actually produced, the favourable opinion which we naturally conceive of it, after conſidering its precepts, cannot but be confirmed.

47 The virtues it recommends unoſtentatious.

One circumſtance we muſt take notice of as rather unfavourable to this review. It is really impoſſible to do juſtice to Chriſtianity by ſuch a diſcuſſion of its merits. The virtues which it has a natural tendency to produce and cheriſh in the human heart, are not of a noiſy oſtentatious kind; they often eſcape the obſervation of the world. Temperance, gentleneſs, patience, benevolence, juſtice, and general purity of manners, are not the qualities which moſt readily attract the admiration and obtain the applauſe of men. The man of Roſs, whom Mr Pope has ſo juſtly celebrated, was a private character; his name is now likely to live, and his virtues to be known to the lateſt poſterity: and yet, however diſintereſted his virtues, however beneficial his influence to all around him, had his character not attracted the notice of that eminent poet, his name

Religion. would perhaps ere this time have been loſt in oblivion. Individuals in private life ſeldom engage the attention of the hiſtorian; his object is to record the actions of princes, warriors, and ſtateſmen. Had not the profeſſors of Chriſtianity in the earlier ages of its exiſtence been expoſed to perſecutions, and unjuſt accuſations from which they were called on to vindicate themſelves, we ſhould be ſtrangers to the names and virtues of ſaints and martyrs, and to the learning and endowments of the firſt apologiſts for Chriſtianity. We can therefore only trace the general influence of the inſtitutions of Chriſtianity on ſociety. We cannot hope to make an accurate enumeration of particulars. In many of the countries in which it has been eſtabliſhed, it has produced a very favourable change on the circumſtances of domeſtic life. Polygamy, a practice repugnant to the will of our Creator (ſee POLYGAMY), who has declared his intentions in this inſtance in the plaineſt manner, by cauſing nearly equal numbers of males and females to be brought into the world, was never completely aboliſhed but by Chriſtianity.

48 Its effects on the manners of nations.

The practice of divorce, too, though in ſome caſes proper and even neceſſary, had been ſo much abuſed at the time of our Saviour's appearance in the world, that he found reaſon to declare it unlawful, unleſs in the caſe of adultery. The propriety and reaſonableneſs of this prohibition will ſufficiently appear, if we conſider, that when divorces are eaſily obtained, both parties will often have nothing elſe in view at the period of marriage than the diſſolution of their nuptial engagements after a ſhort cohabitation; the intereſts of the huſband and the wife will almoſt always be ſeparate; and the children of ſuch a marriage are ſcarce likely to enjoy the cordial affection and tender watchful care of either parent. The huſband in ſuch a caſe will naturally be to his wife, not a friend and protector, but a tyrant; fear and deceit, not love, gratitude, or a ſenſe of duty, will be the principles of the wife's obedience.

In another inſtance, likewiſe, Chriſtianity has produced an happy change on the circumſtances of domeſtic life; it muſt be acknowledged to have contributed greatly to the abolition of ſlavery, or at leaſt to the mitigation of the rigour of ſervitude. The cuſtoms and laws of the Romans in relation to ſlaves were cruel and ſevere. Maſters were often ſo inhuman as to remove aged, ſick, or infirm ſlaves, into an iſland in the Tiber, where they ſuffered them to periſh without pity or aſſiſtance. The greater part of the ſubjects of many of thoſe republics which enjoyed the moſt liberty, groaned under tyrannical oppreſſion; they were condemned to drag out a miſerable exiſtence in hard labour, under inhuman uſage, and to be transferred like beaſts from one maſter to another. The hardſhips of ſlavery were eaſed, not by any particular precept of the Goſpel but by the gentle and humane ſpirit which breathed through the general tenor of the whole ſyſtem of doctrines and precepts of which the Goſpel conſiſts. It muſt indeed be allowed, that a trade in ſlaves is at preſent carried on by people who preſume to call themſelves Chriſtians, and protected by the legiſlature of Chriſtian ſtates: but the ſpirit of the Chriſtian code condemns the practice, and the true Chriſtian will not engage in it.

Partly by the direct and conſpicuous, partly by the ſecret and unſeen, influence of Chriſtianity ſince its promulgation in the world, the hearts of men have been gradually ſoftened; even barbarians have been formed to mildneſs and humanity; the influence of ſelfiſhneſs has been checked and reſtrained; and even war, amid all the pernicious improvements by which men have ſought to render it more terrible, has aſſumed much more of the ſpirit of mildneſs and peace than ever entered into it during the reign of heatheniſm. Religion.

If we review the hiſtory of mankind with a view to their political circumſtances, we ſhall find, that by ſome means or other, it has happened, ſince the time when the Goſpel was firſt preached, that both ſyſtems of legiſlature and forms of government have been raiſed to much greater perfection, at leaſt in thoſe parts of the world into which the religion of Jeſus has made its way, and obtained an eſtabliſhment.

The popular government of the Romans, notwithſtanding the multiplicity of their laws, and the imperfections of their political conſtitution, was, no doubt, happily enough adapted to promote the increaſe of the power and the extenſion of the empire of Rome. In Greece there were various republics, the wiſdom and impartiality of whoſe laws have been highly celebrated. But we apprehend that there is a ſufficient number of well authenticated facts to warrant us to affirm, that ſince Chriſtianity has been propagated, and has had ſufficient time to produce its full effect on arts, manners, and literature, even under governments the form of which might appear leſs favourable than the celebrated models of antiquity to the liberty and happineſs of the people in general, theſe actually have been much better provided for than under the laws of Athens or Sparta, or even of Rome in the days of the conſuls. It is a juſt and happy obſervation of Monteſquieu, who has attributed ſo much to the influence of climate and local circumſtances, that "the mildneſs ſo frequently recommended in the Goſpel is incompatible with the deſpotic rage with which an arbitrary tyrant puniſhes his ſubjects, and exerciſes himſelf in cruelty. It is the Chriſtian religion (ſays he) which, in ſpite of the extent of empire, and the influence of climate, has hindered deſpotiſm from being eſtabliſhed in Ethiopia, and has carried into Africa the manners of Europe. The heir to the empire of Ethiopia enjoys a principality, and gives to other ſubjects an example of love and obedience—Not far from hence may be ſeen the Mahometan ſhutting up the children of the king of Sennaar, at whoſe death the council ſends to murder them in favour of the prince who aſcends the throne. Let us ſet before our eyes (continues that eloquent writer), in the third chapter of the 24th book of his Spirit of Laws, on one hand the continual maſſacres of the kings and generals of the Greeks and Romans, and on the other the deſtruction of people and cities by the famous conquerors Timur Beg and Jenghiz Kan, who ravaged Aſia, and we ſhall perceive, that we owe to Chriſtianity in government a certain political law, and in war a certain law of nations, which allows to the conquered the great advantages of liberty, laws, wealth, and always religion, when the conqueror is not blind to his own intereſt."

Theſe are the reflections of no common judge in this matter, but one who had long ſtudied the hiſtory of nations, and obſerved the phenomena of the various forms of ſociety, with ſuch ſucceſs as few others have attained.

But

Religion.

49 Its effects in softening and humanizing barbarians,

But on no occasion has the mild influence of Christianity been more eminently displayed, or more happily exerted, than in softening and humanizing the barbarians who overturned the Roman empire. The idolatrous religion which prevailed among those tribes before their conversion to Christianity; instead of disposing them to cultivate humanity and mildness of manners, contributed strongly to render them fierce and blood-thirsty, and eager to distinguish themselves by deeds of savage valour. But no sooner had they settled in the dominions of Rome, and embraced the principles of Christianity, than they became a mild and generous people.

We are informed by Mosheim, who was at pains to collect his materials from the most authentic sources, that in the 10th century Christian princes exerted themselves in the conversion of nations whose fierceness they had experienced, in order to soften and render them more gentle. The mutual humanity with which nations at war treat each other in modern times, is certainly owing, in a great measure, to the influence of the mild precepts of the Gospel. It is a fact worthy of notice too, that during the barbarous ages, the spiritual courts of justice were more rational and impartial in their decisions than civil tribunals.

How many criminal practices which prevailed among heathen nations have been abolished by their conversion to Christianity! Christians of all nations have been observed to retain the virtues, and reject the vicious practices of their respective countries. In Parthia, where polygamy prevailed, they are not polygamists; in Persia, the Christian father does not marry his own daughter. By the laws of Zoroaster the Persians committed incest until they embraced the Gospel; after which period they abstained from that crime, and observed the duties of chastity and temperance, as enjoined by its precepts. Even the polished and enlightened Romans were cruel and blood-thirsty before the propagation of the Gospel. The breaking of a glass, or some such trifling offence, was sufficient to provoke Vidius Pollio to cast his slaves into fish-ponds to be devoured by lampreys. The effusion of human blood was their favourite entertainment; they delighted to see men combating with beasts, or with one another; and we are informed on respectable authority, that no wars ever made such havock on mankind as the fights of gladiators, which sometimes deprived Europe of 20,000 lives in one month. Not the humanity of Titus, nor the wisdom and virtue of Trajan, could abolish the barbarous spectacle. However humane and wise in other instances, in this practice those princes complied with the custom of their country, and exhibited splendid shows of gladiators, in which the combatants were matched by pairs; who, though they had never injured nor offended each other, yet were obliged to maim and murder one another in cold blood. Christian divines soon exercised their pens against these horrid practices; the Christian emperor Constantine restrained them by edicts, and Honorius finally abolished them. It would be tedious to proceed through an enumeration of particulars; but wherever Christianity has been propagated, it has constantly operated to the civilization of the manners of mankind, and to the abolition of absurd and criminal practices. The Irish, the Scotch, and all the ancient inhabitants of the British isles, were, notwithstanding their intercourse with the Romans, rude barbarians, till such time as they were converted to Christianity. The inhuman practice of exposing infants, which once prevailed so generally over the world, and still prevails among some Pagan nations, even under very humane and enlightened legislatures, yielded to the influence of Christianity.

Religion.

50 Learning is much indebted to Christianity.

Let us likewise remember, in honour of Christianity, that it has contributed eminently to the diffusion of knowledge, the preservation and the advancement of learning. When the barbarians overspread Europe, what must have become of the precious remains of polished, enlightened antiquity, had there been no other depositaries to preserve them but the heathen priests? We allow that even the Romish clergy during the dark ages did not study the celebrated models of ancient times with much advantage themselves, and did not labour with much assiduity to made the laity acquainted with them. It must even be acknowledged, that they did not always preserve those monuments of genius with sufficient care, as they were often ignorant of their real value. Yet, after all, it will be granted, it cannot be denied, that had it not been for the clergy of the Christian church, the lamp of learning would, in all probability, have been entirely extinguished, during that night of ignorance and barbarity in which all Europe were buried for a long series of centuries, after the irruption of the barbarians into the Roman empire.

51 The beneficial influence of Christianity has extended even to those who have not embraced it.

Such is the excellence of the Christian system, and such its tendency to meliorate the human character, that its beneficial influence has not been confined to those who have received its doctrines and precepts, and have professed themselves Christians; it has even produced many happy effects on the circumstances and the characters of Pagans, and infidels, who have had opportunities of beholding the virtues of Christians, and learning the excellence of the morality of the Gospel. Those virtues which distinguished the character of the apostate Julian were surely owing in no inconsiderable degree to his acquaintance with Christianity; and it is an undeniable fact, that after the propagation of Christianity through the Roman empire, even while the purity of that holy religion was gradually debased, the manners of those Pagans who remained unconverted became more pure, and their religious doctrines and worship less immoral and absurd.—We might here adduce a tedious series of facts to the same purpose. Whenever Christians have had any intercourse with Pagan idolaters, and have not concealed the laws of the Gospel, nor shown by their conduct that they disregarded them, even those who have not been converted to Christianity have, however, been improved in their dispositions and manners by its influence. The emperor, whose virtues we have mentioned as arising, in a certain degree, from his acquaintance with Christianity, in a letter to an Heathen pontiff, desires him to turn his eyes to the means by which the superstition of Christians was propagated: by kindness to strangers, by sanctity of life, and by the attention which they paid to the burial of the dead. He recommends an imitation of their virtues, exhorts him to cause the priests of Galatia to be attentive to the worship of their gods, and authorises him to strip them of the sacerdotal function, unless they obliged their wives, children, and servants,

to pay attention to the ſame duties. He likewiſe enjoins a ſpirit of beneficence, deſires the prieſt to relieve the diſtreſſed, and to build houſes for the accommodation of ſtrangers of whatever religion; and ſays, it is a diſgrace for Pagans to diſregard the rights of their own religion, while Chriſtians do kind offices to ſtrangers and enemies. This is indeed an eminent inſtance of the happy influence of Chriſtianity even on the ſentiments and manners of thoſe who regarded the Chriſtian name with abhorrence.

62 Chriſtianity to be preferred to other religions.

Upon the whole then, may we not, from the particulars here exhibited concerning the influence of this religion on the manners and happineſs of men in ſociety, conclude that Chriſtianity is infinitely ſuperior to the ſuperſtitions of Paganiſm? as being in its tendency uniformly favourable to the virtue and the happineſs of mankind, and even to the ſyſtem of religion and laws delivered by Moſes to the children of Iſrael: becauſe, while the religion of the Jews was calculated only for one particular nation, and it may almoſt be ſaid for one particular ſtage in the progreſs of ſociety, Chriſtianity is an univerſal religion, formed to exert its happy influence in all ages and among all nations; and has a tendency to diſpel the ſhades of barbariſm and ignorance, to promote the cultivation of the powers of the human underſtanding, and to encourage every virtuous refinement of manners.

63 View of Mahometaniſm.

V. Another religion, which has made and ſtill makes a conſpicuous figure in the world remains yet to be examined. The religion of Mahomet is that which we here allude to. Whether we conſider through what an extenſive part of the globe that religion prevails, the political importance of the nations among whom it is profeſſed, or the ſtriking peculiarity of character by which it is diſtinguiſhed from all other religious ſyſtems—it is for all theſe reaſons well worthy of particular notice. Like the Jewiſh religion, it is not barely a ſyſtem of religious doctrines and general moral precepts; it forms both the civil legiſlature and the religious ſyſtem of thoſe nations among whom it is profeſſed; and, like it too, it would appear to be calculated rather for one particular period in the progreſs of mankind from rudeneſs to refinement, than for all ages and all ſtates of ſociety.

The hiſtory of its origin is pretty well known, and we have had occaſion to enlarge upon it under a former article (ſee MAHOMET and MAHOMETANISM). We are not here to trace the impoſtures of the prophet, or to conſider the arts by which he ſo ſucceſsfully accompliſhed his deſigns; but merely to conſider the morality of his religion, and its influence on civil order and the happineſs of ſociety.

64 It ſtrongly favours ſenſuality, ſuperſtition, and impurity.

If we view the ſtate of the nations among whom it is eſtabliſhed, we cannot heſitate a moment to declare it friendly to ignorance, to deſpotiſm, and to impurity of manners. The Turks, the Perſians, and the Malays, are all Mahometans; and in reviewing their hiſtory and conſidering their preſent ſtate, we might find a ſufficient number of facts to juſtify the above aſſertion: and we muſt not neglect to obſerve, that, as theſe nations are not known to have ever been ſince their converſion to Mahometaniſm under a much happier government, or in a much more civilized ſtate than at preſent, it cannot be, with any degree of fairneſs, argued, with reſpect to Mahometaniſm as with reſpect to Chriſtianity, that it is only when its influence is ſo oppoſed by other cauſes as to prevent it from producing its full effects, that it does not conduct thoſe ſocieties among which it is eſtabliſhed to an high ſtate of civilization and refinement. Religion.

55 Remarks on the Koran, &c.

One, and that by no means an inconſiderable, part of the Koran, was occaſionally invented to ſolve ſome difficulty with which the prophet found himſelf at the time perplexed, or to help him to the gratification of his ruling paſſions, luſt and ambition. When he and his followers were, at any time, unſucceſsful in thoſe wars by which he ſought to propagate his religion, to prevent them from falling away into unbelief, or ſinking into deſpondency, he took care to inform them that God ſuffered ſuch misfortunes to befal believers, as a puniſhment for their ſins, and to try their faith. The doctrine of predeſtination, which he aſſiduouſly inculcated, had an happy effect to perſuade his followers to ruſh boldly into the midſt of death and danger at his command. He prevailed with Zeyd to put away his wife, married her himſelf, and pretended that his crime had the approbation of heaven; and, in the Koran, he introduces the Deity approving of this marriage. Being repulſed from the ſiege of Mecca, he made a league with the inhabitants; but on the very next year, finding it convenient to ſurpriſe the city, by violating this treaty, he juſtified his perfidy by teaching his followers to diſregard promiſes or leagues made with infidels. In ſome inſtances again, we find abſurd prohibitions enjoined for ſimilar reaſons: his officers, having on ſome occaſion drunk to exceſs, excited much riot and confuſion in the camp, he prohibited the uſe of wine and other inebriating liquors among his followers in future. Now, though it muſt be acknowledged that many evils ariſe from the uſe of theſe liquors, yet we cannot but think that, when uſed in moderation, they are in many caſes beneficial to men; and certainly as much allowed by God as opium, which the Mahometans have ſubſtituted in their place.

56 Mahometaniſm a mixture of Chriſtianity, Judaiſm, and the ſuperſtitions of Arabia.

Mahomet is allowed to have copied from the Chriſtian and the Jewiſh religions, as well as from the idolatrous ſuperſtitions which prevailed through Arabia, and thus to have formed a motley mixture of reaſon and abſurdity, of pure theiſm and wild ſuperſtition. He conſidered alſo the circumſtances of his country, and the prejudices of his countrymen. When he attended to the former, he was generally judicious enough to ſuit his doctrines and deciſions to them with ſufficient ſkill; the latter he alſo managed with the greateſt art: but he entered into accommodation with them in inſtances when a true prophet or a wiſe and upright legiſlator would ſurely have oppoſed them with deciſive vigour. Where the prophet indulges his own fancy, or borrows from the ſuperſtitions of his countrymen, nothing can be more ridiculous than that rhapſody of lies, contradictions, and extravagant fables, which he delivers to his followers. Amazing are the abſurdities which he relates concerning the patriarchs, concerning Solomon, and concerning the animals that were aſſembled in Noah's ark.

57 Notion of heaven and hell.

But in the whole tiſſue of abſurdities of which his ſyſtem conſiſts, there is nothing more abſurd, or more happily calculated to promote impurity of manners, than his deſcriptions of heaven and hell; the ideas of future rewards and puniſhments which he ſought to impreſs

on

Religion. on the minds of his followers. Paradiſe was to abound with rivers, trees, fruits, and ſhady groves; wine which would not intoxicate was to be there plentifully ſerved up to believers; the inhabitants of that happy region were all to enjoy perpetual youth; and their powers of enjoyment were to be enlarged and invigorated, in order that ſo many fine things might not be thrown away upon them. "Inſtead of inſpiring the bleſſed inhabitants of paradiſe with a liberal taſte for harmony and ſcience, converſation, and friendſhip (ſays Mr Gibbon), Mahomet idly celebrates the pearls and diamonds, the robes of ſilk, palaces of marble, diſhes of gold, rich wines, artificial dainties, numerous attendants, and the whole train of ſenſual luxury.—Seventy two houris, or black-eyed girls of reſplendent beauty, blooming youth, virgin purity, and exquiſite ſenſibility, will be created for the uſe of the meaneſt believer; a moment of pleaſure will be prolonged for 1000 years, and his faculties will be increaſed 100 fold, to render him worthy of his felicity." It muſt be acknowledged that he allows believers other more refined enjoyments than theſe; thus they are to ſee the face of God morning and evening; a pleaſure which is far to exceed all the other pleaſures of paradiſe. The following is his deſcription of the puniſhments of hell: The wicked are there to drink nothing but boiling ſtinking water; breathe nothing but hot winds; dwell for ever in continual burning fire and ſmoke; eat nothing but briars and thorns, and the fruit of a tree that riſeth out of the bottom of hell, whoſe branches reſemble the heads of devils, and whoſe fruits ſhall be in their bellies like burning pitch.

All that we can conclude from a general view of the religion of Mahomet, from conſidering the character of the prophet, or from reviewing the hiſtory of the nations among whom it has been eſtabliſhed, is, that it is one tiſſue of abſurdities, with a few truths, however, and valuable precepts incongruouſly intermixed; that a great part of it is unfavourable to virtuous manners, to wife and equal laws, and to the progreſs of knowledge and refinement. It often inculcates in a direct manner ſentiments that are highly immoral; it ſubſtitutes trifling, ſuperſtitious obſervances in the room of genuine piety and moral virtue; and it gives ſuch views of futurity as render purity of heart no neceſſary qualification for ſeeing God.

58 Mahometaniſm to be preferred to paganiſm.

Surely, therefore, even the deiſt, who rejects all but natural religion, would not heſitate to prefer Chriſtianity, and even Judaiſm, to the religion of Mahomet. Judaiſm, calculated for a peculiar people, was undoubtedly much more ſublime and much more happily framed to render that people virtuous and happy in the circumſtances in which they were placed; and Chriſtianity we find to be an univerſal religion, ſuited to all circumſtances and to all the ſtages of ſociety, and acting, wherever it is received, with more or leſs force to the ſupport of civil order, virtuous manners, improvement of arts, and the advancement of ſcience. However, as Mahometaniſm forms in ſome meaſure a regular ſyſtem, as it has borrowed many of the precepts and doctrines of Judaiſm and Chriſtianity, not indeed without corrupting and degrading them; and as it has contributed conſiderably to the ſupport of civil government, although in a very imperfect form, in thoſe countries in which it has obtained an eſtabliſhment; for all theſe reaſons we cannot but give it the preference to the ſuperſtitions of Paganiſm. Religion

‖ Rembrandt

59 Concluſion.

THE whole reſult of our inquiries under this article, therefore, is, 1. That as man, by the conſtitution of his mind, is naturally fitted for acquiring certain notions concerning the exiſtence of inviſible, ſuperior beings, and their influence on human life; ſo the religious ideas which we find to have in all ages of the world, and in all the different ſtages of the progreſs of ſociety, prevailed among mankind, appear to have originated partly from the natural exertions of the human imagination, underſtanding, and paſſions, in various circumſtances, and partly from ſupernatural revelation.

2. That though religious opinions, together with the moral precepts, and the rites of worſhip connected with them, may appear to have been in numerous inſtances injurious to the virtue and happineſs of ſociety; yet, as they have often contributed to lead the mind to form moral diſtinctions, when it would otherwiſe in all probability have been an entire ſtranger to ſuch diſtinctions; and as they have always contributed in an eſſential manner to the eſtabliſhment and the ſupport of civil government—it muſt therefore be acknowledged that they have always, even in their humbleſt ſtate, been more beneficial than hurtful to mankind.

3. That when the different ſyſtems of religion that have prevailed in the world are comparatively viewed with reſpect to their influence on the welfare of ſociety, we find reaſon to prefer the polytheiſm of the Greeks and Romans to the ruder, wilder, religious ideas and ceremonies that have prevailed among ſavages; Mahometaniſm, perhaps in ſome reſpects, to the polytheiſm of the Greeks and Romans; Judaiſm however to Mahometaniſm; and Chriſtianity to all of them.

RELIGIOUS, in a general ſenſe, ſomething that relates to religion.—We ſay, a religious life, religious ſociety, &c.—Churches and church-yards are religious places.—A religious war is alſo called a *croiſade*. See CROISADE.

RELIGIOUS, is alſo uſed ſubſtantially for a perſon engaged by ſolemn vows to the monaſtic life; or a perſon ſhut up in a monaſtery to lead a life of devotion and auſterity, under ſome rule or inſtitution. The male religious we popularly call *monks* and *friars*; the female, *nuns* and *canoneſſes*.

REMBRANDT (Van Rhin), a Flemiſh painter and engraver of great eminence, was born in 1606, in a mill upon the banks of the Rhine, from whence he derived his name of *Van Rhin*. This maſter was born with a creative genius, which never attained perfection. It was ſaid of him, that he would have invented painting, if he had not found it already diſcovered. Without ſtudy, without the aſſiſtance of any maſter, but by his own inſtinct, he formed rules, and a certain practical method for colouring; and the mixture produced the deſigned effect. Nature is not ſet off to the greateſt advantage in his pictures; but there is ſuch a ſtriking truth and ſimplicity in them, that his heads, particularly his portraits, ſeem animated, and riſing from the canvas. He was fond of ſtrong contraſts of light and ſhade. The light entered in his working-room only by a hole, in the manner of a camera obſcura, by which he judged with greater certainty of his productions. This artiſt conſidered painting like the ſtage, where

Rembrandt where the characters do not ſtrike unleſs they are exaggerated. He did not purſue the method of the Flemiſh painters of finiſhing his pieces. He ſometimes gave his light ſuch thick touches, that it ſeemed more like modelling than painting. A head of his has been ſhown, the relief of which was as thick of paint, as that which he copied from nature. He was told one day, that by his peculiar method of employing colours, his pieces appeared rugged and uneven—he replied, he was a painter, and not a dyer. He took a peculiar pleaſure in dreſſing his figures in an extraordinary manner: with this view he had collected a great number of eaſtern caps, ancient armour, and drapery long ſince out of faſhion. When he was adviſed to conſult antiquity to attain a better taſte in drawing, as his was uſually heavy and uneven, he took his counſellor to the cloſet where theſe old veſtments were depoſited, ſaying, by way of deriſion, thoſe were his antiques.

Remembrancers.

Rembrandt, like moſt men of genius, had many caprices. Being one day at work, painting a whole family in a ſingle picture, word being brought him that his monkey was dead, he was ſo affected at the loſs of this animal, that, without paying any attention to the perſons who were ſitting for their pictures, he painted the monkey upon the ſame canvas. This whim could not fail of diſpleaſing thoſe the piece was deſigned for: but he would not efface it, chooſing rather to loſe the ſale of his picture.

This freak will appear ſtill more extraordinary in Rembrandt, when it is conſidered that he was extremely avaricious; which vice daily grew upon him. He practiſed various ſtratagems to ſell his prints at a high price. The public were very deſirous of purchaſing them, and not without reaſon. In his prints the ſame taſte prevails as in his pictures; they are rough and irregular, but picturesque. In order to heighten the value of his prints, and increaſe their price, he made his ſon ſell them as if he had purloined them from his father; others he expoſed at public ſales, and went thither himſelf in diſguiſe to bid for them; ſometimes he gave out that he was going to leave Holland, and ſettle in another country. Theſe ſtratagems were ſucceſsful and he got his own price for his prints. At other times he would print his plates half finiſhed, and expoſe them to ſale; he afterwards finiſhed them, and they became freſh plates. When they wanted retouching, he made ſome alterations in them, which promoted the ſale of his prints a third time, though they differed but little from the firſt impreſſions.

His pupils, who were not ignorant of his avarice, one day painted ſome pieces of money upon cards; and Rembrandt no ſooner ſaw them, than he was going to take them up. He was not angry at the pleaſantry, but his avarice ſtill prevailed. He died in 1674.

REMEMBRANCE, is when the idea of ſomething formerly known recurs again to the mind without the operation of a like object on the external ſenſory. See Memory and Reminiscence.

REMEMBRANCERS, in England, anciently called *clerks of the remembrance*, certain officers in the exchequer, whereof three are diſtinguiſhed by the names of the *king's remembrancer*, the *lord treaſurer's remembrancer*, and the *remembrancer of the firſt fruits*. The king's remembrancer enters in his office all recognizances taken before the barons for any of the king's debts, for appearances or obſerving of orders; he alſo takes all bonds for the king's debts, &c. and makes out proceſſes thereon. He likewiſe iſſues proceſſes againſt the collectors of the cuſtoms, exciſe, and others, for their accounts; and informations upon penal ſtatutes are entered and ſued in his office, where all proceedings in matters upon Engliſh bills in the exchequer-chamber remain. His duty further is to make out the bills of compoſitions upon penal laws, to take the ſtatement of debts; and into his office are delivered all kinds of indentures and other evidences which concern the aſſuring any lands to the crown. He every year *in craſtino animarum*, reads in open court the ſtatute for election of ſheriffs; and likewiſe openly reads in court the oaths of all the officers, when they are admitted

Remembrancers & Remora.

The lord treaſurer's remembrancer is charged to make out proceſs againſt all ſheriffs, eſcheators, receivers, and bailiffs, for their accounts. He alſo makes out writs of *fieri facias*, and extent for debts due to the king, either in the pipe or with the auditors; and proceſs for all ſuch revenue as is due to the king on account of his tenures. He takes the account of ſheriffs; and alſo keeps a record, by which it appears whether the ſheriffs or other accountants pay their proffers due at Eaſter and Michaelmas; and at the ſame time he makes a record, whereby the ſheriffs or other accountants keep their prefixed days: there are likewiſe brought into his office all the accounts of cuſtomers, comptrollers, and accounts, in order to make entry thereof on records; alſo all eſtreats and amercements are certified here, &c.

The remembracer of the firſt-fruits takes all compoſitions and bonds for the payment of firſt-fruits and tenths; and makes out proceſs againſt ſuch as do not pay the ſame.

REMINISCENCE, that power of the human mind, whereby it recollects itſelf, or calls again into its remembrance ſuch ideas or notions as it had really forgotten: in which it differs from memory, which is a treaſuring up of things in the mind, and keeping them there, without forgetting them.

REMISSION, in phyſics, the abatement of the power or efficacy of any quality; in oppoſition to the *increaſe* of the ſame, which is called *intenſion*.

Remission, in law, &c. denotes the pardon of a crime, or the giving up the puniſhment due thereto.

Remission, in medicine, is when a diſtemper abates for a time, but does not go quite off.

REMITTANCE, in commerce, the traffick or return of money from one place to another, by bills of exchange, orders, or the like.

REMONSTRANCE, an expoſtulation or ſupplication, addreſſed to the chief magiſtrate, or other ſuperior, beſeeching him to reflect on the inconveniences or ill conſequences of ſome order, edict, or the like. This word is alſo uſed for an expoſtulatory counſel, or advice; or a gentle and handſome reproof, made either in general, or particular, to apprize of or correct ſome fault, &c.

REMORA, or Sucking-fish, a ſpecies of Echeneis. Many incredible things are related of this animal by the ancients; as that it had the power of ſtopping the largeſt and ſwifteſt veſſel in its courſe: and even to this day it is aſſerted by the fiſhermen in the Mediterranean, that it has a power of retarding the motion of their boats by attaching itſelf to them; for which

Remorſe, Remphan.

which reaſon they kill it whenever they perceive this retardation. But in what manner the remora performs this, we have no account.

REMORSE, in its worſt ſenſe, means that pain or anguiſh which one feels after having committed ſome bad action. It alſo means tenderneſs, pity, or ſympathetic ſorrow. It is moſt generally uſed in a bad ſenſe, and is applied to perſons who feel compunction for ſome great crime, as murder and ſuch like. Murders which have been committed with the utmoſt circumſpection and ſecrecy, and the authors of which could never have been diſcovered by any human inveſtigation have been frequently unfolded by the remorſe and confeſſion of the perpetrators, and that too, many years afterwards. Of this there are numerous inſtances, which are well authenticated, and which are ſo generally known that it is needleſs to relate them here. See Repentance.

REMPHAN, an idol or Pagan god whom St Stephen ſays the Iſraelites worſhipped in the wilderneſs as they paſſed from Egypt to the land of Promiſe: "Yea, ye took up the tabernacle of Moloch, and the ſtar of your god Remphan; figures which ye made to worſhip them." That the martyr here quotes the following words of the prophet Amos, all commentators are agreed: "Ye have borne the tabernacle of your Moloch, and Chiun your images, the ſtar of your god, which ye made to yourſelves." But if this coincidence between the Chriſtian preacher and the Jewiſh prophet be admitted, it follows, that *Chiun* and *Remphan* are two names of one and the ſame deity. This is indeed farther evident from the LXX. tranſlators having ſubſtituted in their verſion the word Ραιφαν inſtead of *Chiun*, which we read in the Hebrew and Engliſh Bibles. But the queſtion which ſtill remains to be anſwered is, what god was worſhipped by the name of *Remphan*, *Raiphan*, or *Chiun?* for about the other divinity here mentioned there is no diſpute. See Moloch.

That *Chiun* or *Remphan* was an Egyptian divinity, cannot be queſtioned; for at the era of the *Exodus* the Hebrews muſt have been ſtrangers to the idolatrous worſhip of all other nations; nor are they ever accuſed of any other than Egyptian idolatries during their 40 years wanderings in the wilderneſs, till towards the end of that period that they became infected by the Moabites with the worſhip of *Baal-peor*. That *Moloch*, *Moleck*, *Melek*, or *Milcom*, in its original acceptation denotes a *king* or *chief*, is known to every oriental ſcholar; and therefore when it is uſed as the name of a god, it undoubtedly ſignifies the *ſun*, and is the ſame divinity with the *Egyptian Oſiris*. Reaſoning in this way many critics, and we believe Seldon is in the number, have concluded that *Chiun*, and of courſe *Remphan*, is the planet *Saturn*; becauſe *Chiun* is written *Ciun*, *Cenan*, *Ceuan Chevvin*; all of which are modern oriental names of that planet.

But againſt this hypotheſis inſurmountable objections preſent themſelves to our minds. It is univerſally allowed (ſee Polytheism), that the firſt objects of idolatrous worſhip were the *ſun* and *moon*, conſidered as the king and queen of heaven. The fixed ſtars, indeed, and the planets, were afterwards gradually admitted into the Pagan rubric; but we may be ſure that thoſe would be firſt aſſociated with the two prime luminaries which moſt reſembled them in brightneſs, and were ſuppoſed to be moſt benignant to man. But the planet Saturn appears to the naked eye with ſo feeble a luſtre, that, in the infancy of aſtronomy, it could not make ſuch an impreſſion on the mind as to excite that admiration which we muſt conceive to have always preceded planetary worſhip. It is to be obſerved, too, that by the Pagan writers of antiquity Saturn is conſtantly repreſented as a ſtar of baleful influence. He is termed the *leaden planet*; *the planet of malevolent aſpect*; the *diſmal*, the *inhumane ſtar*. That the Egyptians, at ſo early a period as that under conſideration, ſhould have adored as one of their greateſt gods a planet obſcure in its appearance, diſtant in its ſituation, and baleful in its influence, is wholly incredible. Remphan.

There is, however, another ſtar which they might naturally adore, and which we know they actually did adore, as one of their moſt beneficent gods, at a very early period. This is the αστραπων or σειριος of the Greeks, the *canis* or *ſtella canicularis* of the Romans, and the *dog-ſtar* of modern Europe. By the Egyptians it was called *Sothis* or *Soth*, which ſignifies *ſafety*, *beneficence*, *fecundity*; and it received this name, becauſe making its appearance in the heavens at the very time when the Nile overflowed the country, it was ſuppoſed to regulate the inundation. On this account Plutarch (*Iſ. et Oſir.*) tells us, they believed the ſoul of their illuſtrious benefactreſs *Iſis* to have tranſmigrated into the ſtar *Sothis*, which they therefore worſhipped as the divinity which rendered their country fruitful. It made its appearance, too, on the firſt day of the month *Thoth* (A), which was the beginning of the Egyptian year, and as ſuch celebrated with feaſting and feſtivity; and being by much the brighteſt ſtar in the heavens, Horopollo (*cap.* 3.) informs us it was conſidered as ſovereign over the reſt. A combination of ſo many important circumſtances might have induced a people leſs ſuperſtitious, than the Egyptians to pay divine homage to that glorious luminary, which was confounded with *Iſis*, who had been long regarded with the higheſt veneration; and as Iſis was the wife and ſiſter of Oſiris, and always aſſociated with him, the ſtar of Iſis or *Remphan* was naturally aſſociated with *Moloch*, the ſame with Oſiris.

But it will be aſked, how the ſtar which by the Egyptians was called *Soth* or *Sothis* came to be worſhipped by the Hebrews under the appellation of *Chiun* or *Remphan?* This is a very pertinent queſtion, and we ſhall endeavour to anſwer it.

Every one knows that the pronunciation of oriental words is very uncertain; and that as the vowels were often omitted in writing, it is of very little importance to the meaning how they be ſupplied, provided we retain the radical conſonants. The word *Chiun* may with equal propriety be written *Kiun*, *Kion*, or even *Kyon*, he

(A) This was the caſe at a very remote period; but it is otherwiſe at preſent, owing to the *Precession of the Equinoxes*. See that article.

Remphan. the Hebrew and being convertible into the Greek and the Roman; but the words *Cun*, *Chun*, *Kon*, or *Khan*, which are often diversified into *Kan*, *Kon*, *Cohen*, *Cohan*, *Lording*, *Head*, *Chief*, *Prince*, *King*, &c. are diffused through a great part of Asia and Europe. In the Chinese language *Kiun*, which signifies a *King*, is so similar to the word *Chun* or *Khun* under consideration, that no etymologist will hesitate to pronounce them of the same original and the same import. The word *Kan* or *Khan*, so worthy known to be an honorary title in Tartary; and *Kunwar* or *Kuar*, which is manifestly a corrupt of the word *Chun* or *Kun*, is, in the *Pahvi* or old Persian language, the epithet applied to the eldest of princes which succeeded Cyrus the Great. Among the Scythians or ancient Tartars, *Chun* signifies the *Sun* and likewise the *day*; and *King*, *Khing*, *Kan*, run through all the dialects of the Gothic tongues, every where denoting a *king* or *sovereign*. In the Syrian dialect, *Kun* signifies a prince; and hence the Almighty is styled (Gen. xiv. 19.) *Konah*, which is translated *possessor*, but might have, with perhaps more propriety, been rendered *Sovereign* of heaven and earth. In Hebrew, the word *Kohen* or *Kaben*, which is the very same with *Khun* or *Kun*, signifies either a *priest* or a *prince*; and in Egypt *Kon* was the name of the first Hercules or the *sun*. Hence the same word in composition denotes greatness, as *Can-obus* the great serpent; *Canabeth*, the great *Theuth* or Mercury; *Cangitis*, the great *Gyris*.

From this deduction we would conclude, that the word, which is found in so many tongues, and always denotes *Chief*, *Prince*, *Sovereign*, is the very word *Chiun* which the Egyptians and Hebrews applied to *Sothis*, as being, in their conceptions, the chief or sovereign of all the stars. This will appear still more probable, when we have ascertained the import of the word *Remphan*, or, as the LXX have it, *Raiphan*.

Phan, the latter part of this word, is unquestionably the same with *Pan*, the most ancient of the Egyptian gods (see PAN). It is likewise a cognate of the Hebrew *Phanah*, conspexit, spectavit, vidit; and the radical word seems to be PHAH, which signifies sometimes the countenance, and sometimes *light*. Hence *Phaethon*, which is compounded of *pha* light, *eth* or *esh* fire, and *on* strength, came to be one of the names of the sun. *Rai*, which we commonly write *Rajah*, has long signified, among the Indians, a subordinate prince; and we know, that between India and Egypt there was a very early intercourse. *Raiphan*, therefore, may be either the *royal light* or the *bright prince*, subordinate to Osiris; and in either sense, it was a very proper epithet of *Sothis* in the Egyptian kalendar. The word *Rem* or *Rom*, again (for it is sometimes written Remphan, and sometimes Rompha), is no other than the Hebrew רום *Rum* "high, exalted." Hence Remphan is the *high* or *exalted light*, which Sothis certainly was.

For this etymological disquisition we are indebted to Dr Doig, the learned author of *Letters on the Savage State*, who has written a dissertation on *Chiun* and *Remphan*, of such value that we hope it will not be much longer with-held from the public. The ascertaining the identity of those names, and the god to which they belonged, is the least of its merit; for it will be found to throw much light upon many passages in the Old Testament. What confirms his interpretation is, that the idol consecrated by the Egyptians to *Sothis* or the dog-star, was a female figure with a star on her head; and hence the prophet upbraids his countrymen with having borne the *Star* of their deity.

Removing in Renfrewshire.

ACTION OF REMOVING, in Scots law. See LAW, N° clxii. 18.

REMURIA, festivals established at Rome by Romulus to appease the manes of his brother Remus. They were afterwards called Lemuria, and celebrated yearly.

REMUS, the brother of Romulus, was exposed together with his brother by the cruelty of his grandfather. In the contest which happened between the two brothers about building a city, Romulus obtained the preference, and Remus, for ridiculing the rising walls, was put to death by his brother's orders, or by Romulus himself (see ROMULUS). The Romans were afflicted with a plague after this murder; upon which the oracle was consulted, and the manes of Remus appeased by the institution of the Remuria.

RENAL, something belonging to the reins or KIDNEYS.

RENCOUNTER, in the military art, the encounter of two little bodies or parties of forces. In which sense *rencounter* is used in opposition to a pitched battle.

RENCOUNTER, in single combats, is used by way of contradistinction to DUEL.—When two persons fall out and fight on the spot without having premeditated the combat, it is called a *rencounter*.

RENDEZVOUS, or RENDEVOUS, a place appointed to meet in at a certain day and hour.

RENEALMIA, in botany; a genus of the monogynia order, belonging to the monandria class of plants. The corolla is trifid; the nectarium oblong; the calyx monophyllous; the anthera sessile, opposite to the nectarium; the berry is fleshy. There is only one species, which is a native of Surinam.

RENEGADE, or RENEGADO, a person who has apostatized or renounced the Christian faith, to embrace some other religion, particularly Mahometanism.

RENFREW, the county-town of Renfrewshire, standing on the small river Cathcart, which flows into the Clyde at the distance of five miles from Glasgow, is a small but ancient royal borough, the seat of the sheriff's court and of a presbytery. The town is neatly built, and the inhabitants enjoy a tolerable share of commerce.—Renfrew was originally joined to Lanerk, but was made an independent sheriffdom by Robert II. who had a palace here. W. Long. 4. 26. N. Lat. 55. 51.

RENFREWSHIRE, a county of Scotland, styled by way of eminence the *barony*, because it was the ancient inheritance of the Stewarts, is a small county, extending about 20 miles from north to south, and 13 from east to west, parted from Dumbartonshire by the river Clyde on the west, bordering on the east with Lanerkshire, and on the north with Cunningham. The face of the country is varied with hill and vale, wood and stream; crowded with populous villages, and adorned with the seats of gentlemen. The soil is in general fertile, producing rye, barley, oats, pease, beans, flax, and some wheat: it likewise yields plenty of coal, and turf for fuel: and affords abundance of pasturage for sheep and cattle. The inhabitants are Lowlanders and Presbyterians; wealthy and industrious, addicted to traffic, and particularly expert in the linen manufacture.

Their

Rennes || Repealing.

Their genius is ſtimulated to commerce, by the example of their neighbours of Glaſgow, as well as the convenience of the river and frith of Clyde, along the courſe of which they are ſituated.

RENNES, a town of France, in Bretagne, and capital of that province. Before the revolution it had a biſhop's ſee, two abbeys, a parliament, and a mint. It is very populous; the houſes are ſix or ſeven ſtories high, and the ſuburbs of larger extent than the town itſelf. The cathedral church is large, and the parliament-houſe a handſome ſtructure. The great ſquare belonging to it is ſurrounded with handſome houſes. There is a tower, formerly a pagan temple, which now contains the town-clock. It is ſeated on the river Villaine, which divides it into two parts, and was anciently fortified, but the walls are now in ruins, and the ditch nearly filled up. The ſiege of the city by Edward III. king of England, is very celebrated in hiſtory. The Engliſh and Breton army conſiſted of 40,000 men; and nevertheleſs, after having remained before it ſix months, were obliged to retire without ſucceſs. E. Long. 0. 23. N. Lat. 48. 7.

RENNET. See RUNNET.

RENT, in law, a ſum of money, or other conſideration, iſſuing yearly out of lands or tenements.

RENTERING, in the manufactories, the ſame with fine-drawing. It conſiſts in ſewing two pieces of cloth edge to edge, without doubling them, ſo that the ſeam ſcarce appears; and hence it is denominated *fine-drawing*. It is a French word meaning the ſame thing, and is derived from the Latin *retrahere*, or *re*, *in*, and *trahere*, becauſe the ſeam is drawn in or covered. We are told *, that in the Eaſt Indies, if a piece of fine muſlin be torn and afterwards mended by the fine-drawers, it will be impoſſible to diſcover where the rent was. In Britain the dexterity of the fine-drawers is not ſo great as that of thoſe in the eaſt; but it is ſtill ſuch as to enable them to defraud the revenue, by ſewing a head or ſlip of Engliſh cloth on a piece of Dutch, Spaniſh, or other foreign cloth: or a ſlip of foreign cloth on a piece of Engliſh, ſo as to paſs the whole as of a piece; and by that means avoid the duties, penalties, &c. The trick was firſt diſcovered in France by M. Savary.

* Lettres Edifiantes et Curieuſes.

RENTERING, in tapeſtry, is the working new warp into a piece of damaged Tapeſtry, whether eaten by the rats or otherwiſe deſtroyed, and on this warp to reſtore the ancient pattern or deſign. The warp is to be of woollen, not linen. Among the titles of the French tapeſtry makers is included that of renterers. Fine-drawing is particularly uſed for a rent or hole, which happens in dreſſing or preparing a piece of cloth artfully ſewed up or mended with ſilk. All fine-drawings are reckoned defects or blemiſhes; and ſhould be allowed for in the price of the piece.

RENVERSE, INVERTED, in heraldry, is when any thing is ſet with the head downwards, or contrary to its natural way of ſtanding. Thus, a chevron renverſé, is a chevron with the point downwards. They uſe alſo the ſame term when a beaſt is laid on its back.

RENUNCIATION, the act of renouncing, abdicating, or relinquiſhing, any right, real or pretended.

REPARTEE, a ſmart, ready reply, eſpecially in matters of wit, humour, or raillery. See RAILLERY.

REPEALING, in law, the revoking or annulling of a ſtatute or the like.

No act of parliament in England ſhall be repealed the ſame ſeſſion in which it was made. A deed or will may be repealed in part, and ſtand good for the reſt. It is held that a pardon of felony may be repealed on diſproving the ſuggeſtion thereof.

Repellents || Replevin.

REPELLENTS, in medicine, remedies which drive back a morbid humour into the maſs of blood, from whence it was unduly ſecreted.

REPENTANCE, in general, means ſorrow for any thing paſt. In theology it means ſuch a ſorrow for ſin as produces newneſs of life, or ſuch a conviction of the evil and danger of a ſinful courſe as is ſufficient to produce ſhame and ſorrow in the review of it, and effectual reſolutions of amendment. In this ſenſe the evangelical writers uſe *μεταμέλεια* and *μετανοια*. See PENITENCE and THEOLOGY.

REPERCUSSION, in muſic, a frequent repetition of the ſame ſound.

REPERTORY, a place wherein things are orderly diſpoſed, ſo as to be eaſily found when wanted. The indices of books are repertories, ſhowing where the matters ſought for are treated of. Common-place books are alſo kinds of repertories.

REPETITION, the reiterating of an action.

REPETITION, in muſic, denotes a reiterating or playing over again the ſame part of a compoſition, whether it be a whole ſtrain, part of a ſtrain, or double ſtrain, &c. When the ſong ends with a repetition of the firſt ſtrain, or part of it, the repetition is denoted by *da capo*, or D. C. *i. e.* "from the beginning."

REPETITION, in rhetoric, a figure which gracefully and emphatically repeats either the ſame word, or the ſame ſenſe in different words. See ORATORY, n° 67—80.

The nature and deſign of this figure is to make deep impreſſions on thoſe we addreſs. It expreſſes anger and indignation, full aſſurance of what we affirm, and a vehement concern for what we have eſpouſed.

REPHIDIM (anc. geog.), a ſtation of the Iſraelites near mount Horeb, where they murmured for want of water; when Moſes was ordered to ſmite the rock Horeb, upon which it yielded water. Here Joſhua diſcomfited the Amalekites. This rock, out of which Moſes brought water, is a ſtone of a prodigious height and thickneſs, riſing out of the ground; on two ſides of which are ſeveral holes, by which the water ran. (Thevenot.)

REPLEGIARE, in law, ſignifies to redeem a thing taken or detained by another, by putting in legal ſureties.

DE HOMINE REPLEGIANDO. See HOMINE.

REPLEVIN, in law, a remedy granted on a diſtreſs, by which the firſt poſſeſſor has his goods reſtored to him again, on his giving ſecurity to the ſheriff that he will purſue his action againſt the party diſtraining, and return the goods or cattle if the taking them ſhall be adjudged lawful.

In a replevin the perſon diſtrained becomes plaintiff; and the perſon diſtraining is called the *defendant* or *avowant*, and his juſtification an *avowry*.

At the common law replevins are by writ, either out of the king's-bench or common-pleas; but by ſtatute, they are by plaint in the ſheriff's court, and court-baron, for a perſon's more ſpeedily obtaining the goods diſtrained.

Replevy Reprieve

If a plaint in replevin be removed into the court of king's bench, &c. and the plaintiff makes default and becomes non-ſuit, or judgment is given againſt him, the defendant in replevin ſhall have the writ of *retorno habendo* of the goods taken in diſtreſs. See the next article.

REPLEVY, in Engliſh law, is a tenant's bringing a writ of replevin, or *replegiari facias*, where his goods are taken by diſtreſs for rent; which muſt be done within five days after the diſtreſs, otherwiſe at the five days end they are to be appraiſed and ſold.

This word is alſo uſed for bailing a perſon, as in the caſe of a *homine replegiando*.

REPORT, the relation made upon oath, by officers or perſons appointed to viſit, examine, or eſtimate the ſtate, expences, &c. of any thing.

Report, in Engliſh law, is a public relation of caſes judiciouſly argued, debated, reſolved, or adjudged in any of the king's courts of juſtice, with the cauſes and reaſons of the ſame, as delivered by the judges. Alſo when the court of chancery, or any other court, refers the ſtating of a caſe, or the comparing of an account, to a maſter of chancery, or other referee, his certificate thereon is called a *report*.

REPOSE, in poetry, &c. the ſame with reſt and pauſe. See Rest, &c.

Repose, in painting, certain maſſes or large aſſemblages of light and ſhade, which being well conducted, prevent the confuſion of objects and figures, by engaging and fixing the eye ſo as it cannot attend to the other parts of the painting for ſome time; and thus leading it to conſider the ſeveral groups gradually, proceeding as it were from ſtage to ſtage.

REPRESENTATION, in the drama, the exhibition of a theatrical piece, together with the ſcenes, machinery, &c.

REPRESENTATIVE, one who perſonates or ſupplies the place of another, and is inveſted with his right and authority. Such, for inſtance, are the Repreſentatives of the United States in Congreſs.

REPRIEVE, in criminal law (from *reprendre*, "to take back"), is the withdrawing of a ſentence for an interval of time; whereby the execution is ſuſpended. See Judgment.

Reprieves may be, firſt, *ex arbitrio judicis*, either before or after judgment: as, where the judge is not ſatisfied with the verdict, or the evidence is ſuſpicious, or the indictment is inſufficient, or he is doubtful whether the offence be within clergy; or ſometimes if it be a ſmall felony, or any favourable circumſtances appear in the criminal's character, in order to give room to apply to the crown for either an abſolute or conditional pardon. Theſe arbitrary reprieves may be granted or taken off by the juſtices of gaol-delivery, although their ſeſſion be finiſhed, and their commiſſion expired: but this rather by common courſe than of ſtrict right.

Reprieves may alſo be *ex neceſſitate legis*: as where a woman is capitally convicted, and pleads her pregnancy. Though this is no cauſe to ſtay judgment, yet it is to reſpite the execution till ſhe be delivered. This is a mercy dictated by the law of nature, *in favorem prolis*; and therefore no part of the bloody proceedings in the reign of Queen Mary hath been more juſtly deteſted, than the cruelty that was exerciſed in the iſland of Guernſey, of burning a woman big with child; and, when through the violence of the flames the infant ſprang forth at the ſtake, and was preſerved by the by-ſtanders, after ſome deliberations of the prieſts who aſſiſted at the ſacrifice, they caſt it into the fire as a young heretic. A barbarity which they never learned from the laws of ancient Rome; which direct, with the ſame humanity as our own *quod prægnantis mulieris damnatæ pœna differatur, quoad pariat*: which doctrine has alſo prevailed in England, as early as the firſt memorials of their law will reach. In caſe this plea be made in ſtay of execution, the judge muſt direct a jury of twelve matrons or diſcreet women to inquire into the fact: and if they bring in their verdict *quick with child* (for barely *with child*, unleſs it be alive in the womb, is not ſufficient), execution ſhall be ſtaid generally till the next ſeſſion; and ſo from ſeſſion to ſeſſion, till either ſhe is delivered, or proves by the courſe of nature not to have been with child at all. But if ſhe once hath had the benefit of this reprieve, and been delivered, and afterwards becomes pregnant again, ſhe ſhall not be intitled to the benefit of a farther reſpite for that cauſe. For ſhe may now be executed before the child is quick in the womb; and ſhall not, by her own incontinence, evade the ſentence of juſtice.

Another cauſe of regular reprieve is, if the offender become *non compos* between the judgment and the award of execution: for regularly, though a man be *compos* when he commits a capital crime, yet if he becomes *non compos* after, he ſhall not be indicted; if after indictment, he ſhall not be convicted; if after conviction, he ſhall not receive judgment; if after judgment, he ſhall not be ordered for execution: for *furioſus ſolo furore punitur*; and the law knows not but he might have offered ſome reaſon, if in his ſenſes, to have ſtayed theſe reſpective proceedings. It is therefore an invariable rule, when any time intervenes between the attainder and the award of execution, to demand of the priſoner what he hath to allege why execution ſhould not be awarded againſt him; and, if he appears to be inſane, the judge in his diſcretion may and ought to reprieve him. Or, the party may plead in bar of execution; which plea may be either pregnancy, the king's pardon, an act of grace, or diverſity of perſon, *viz.* that he is not the ſame that was attainted, and the like. In this laſt caſe a jury ſhall be impannelled to try this collateral iſſue, namely, the identity of his perſon; and not whether guilty or innocent, for that has been decided before. And in theſe collateral iſſues the trial ſhall be *inſtanter*; and no time allowed the priſoner to make his defence or produce his witneſſes, unleſs he will make oath that he is not the perſon attainted: neither ſhall any peremptory challenges of the jury be allowed the priſoner, though formerly ſuch challenges were held to be allowable whenever a man's life was in queſtion. If neither pregnancy, inſanity, non-identity, nor other plea, will avail to avoid the judgment, and ſtay the execution conſequent thereupon, the laſt and ſureſt reſort is in the king's moſt gracious pardon; the granting of which is the moſt amiable prerogative of the crown. See the article Pardon.

Reprieve, Reprisals.

REPRISALS, a right which governments claim of taking from their enemies any thing equivalent to what they unjuſtly detain from them or their citizens. For as the delay of making war may ſometimes be detrimental to individuals who have ſuffered by depredations

from

Reprisals. Blackst. Comment.

from foreign potentates, our laws have in some respects armed the subject with powers to impel the prerogative; by directing the ministers of the crown to issue letters of marque and reprisal upon due demand: the prerogative of granting which is nearly related to, and plainly derived from, that other of making war; this being indeed only an incomplete state of hostilities, and generally ending in a formal denunciation of war. These letters are grantable by the law of nations, whenever the subjects of one state are oppressed and injured by those of another; and justice is denied by that state to which the oppressor belongs. In this case letters of marque and reprisal (words used as synonymous; and signifying, the latter a taking in return, the former the passing the frontiers in order to such taking) may be obtained, in order to seize the bodies or goods of the subjects of the offending state, until satisfaction be made, wherever they happen to be found. And indeed this custom of reprisals seems dictated by nature herself; for which reason we find in the most ancient times very notable instances of it. But here the necessity is obvious of calling in the sovereign power, to determine when reprisals may be made; else every private sufferer would be a judge in his own cause. In pursuance of which principle, it is with us declared by the stat. 4 Hen. V. c. 7. that, if any subjects of the realm are oppressed in time of truce by any foreigners, the king will grant marque in due form, to all that feel themselves grieved. Which form is thus directed to be observed: the sufferer must first apply to the lord privy-seal, and he shall make out letters of request under the privy-seal; and if after such request of satisfaction made, the party required do not within convenient time make due satisfaction or restitution to the party grieved, the lord-chancellor shall make him out letters of marque under the great seal; and by virtue of these he may attack and seize the property of the aggressor nation, without hazard of being condemned as a robber or pirate.

Reprisal, or *Recaption*, is a species of remedy allowed to an injured person. This happens when any one hath deprived another of his property in goods or chattels personal, or wrongfully detains one's wife, child, or servant: in which case the owner of the goods, and the husband, parent, or master, may lawfully claim and retake them, wherever he happens to find them; so it be not in a riotous manner, or attended with a breach of the peace. The reason for this is obvious; since it may frequently happen that the owner may have this only opportunity of doing himself justice: his goods may be afterwards conveyed away and destroyed; and his wife, children, or servants, concealed or carried out of his reach; if he had no speedier remedy than the ordinary process of law. If therefore he can so contrive it as to gain possession of his property again, without force or terror, the law favours and will justify his proceeding. But, as the public peace is a superior consideration to any one man's private property; and as, if individuals were once allowed to use private force as a remedy for private injuries, all social justice must cease, the strong would give law to the weak, and every man would revert to a state of nature; for these reasons it is provided, that this natural right of recaption shall never be exerted, where such exertion must occasion strife and bodily contention, or endanger the peace of society. If, for instance, my horse is taken away, and I find him in a common, a fair, or a public inn, I may lawfully seize him to my own use: but I cannot justify breaking open a private stable, or entering on the grounds of a third person, to take him, except he be feloniously stolen; but must have recourse to an action at law.

Reprobation. Reprobate.

REPROBATION, in theology, means the act of abandoning, or state of being abandoned, to eternal destruction, and is applied to that decree or resolve which God has taken from all eternity to punish sinners who shall die in impenitence; in which sense it is directly opposed to election. When a sinner is so hardened as to feel no remorse or misgiving of conscience, it is considered as a sign of reprobation; which by the casuists has been distinguished into positive and negative. The first is that whereby God is supposed to create men with a positive and absolute resolution to damn them eternally. This opinion is countenanced by St Augustine and other Christian fathers, and is a peculiar tenet of Calvin and most of his followers. The church of England, in *The thirty-nine Articles*, teaches something like it; and the church of Scotland, in the *Confession of Faith*, maintains it in the strongest terms. But the notion is generally exploded, and is believed by no rational divine in either church, being totally injurious to the justice of the Deity. Negative or conditional reprobation is that whereby God, though he has a sincere desire to save men, and furnishes them with the necessary means, so that all if they will may be saved, yet sees that there are many who will not be saved by the means, however powerful, that are afforded them; tho' by other means which the Deity sees, but will not afford them, they might be saved. Reprobation respects angels as well as men, and respects the latter either fallen or unfallen. See Predestination.

REPRODUCTION, is usually understood to mean the restoration of a thing before existing, and since destroyed. It is very well known that trees and plants may be raised from slips and cuttings; and some late observations have shown, that there are some animals which have the same property. The polype * was the first instance we had of this; but we had scarce time to wonder at the discovery Mr Trembley had made, when Mr Bonett discovered the same property in a species of water-worm. Amongst the plants which may be raised from cuttings, there are some which seem to possess this quality in so eminent a degree, that the smallest portion of them will become a complete tree again.

* See Polypus.

It deserves inquiry, whether or not the great Author of nature, when he ordained that certain insects, as these polypes and worms, should resemble those plants in that particular, allowed them this power of being reproduced in the same degree? or, which is the same thing, whether this reproduction will or will not take place in whatever part the worm is cut? In order to try this, Mr Bonett entered on a course of many experiments on the water-worms which have this property. These are, at their common growth, from two to three inches long, and of a brownish colour, with a cast of reddish. From one of these worms he cut off the head and tail, taking from each extremity only a small piece of a twelfth of an inch in length; but neither of these pieces were able to reproduce what was wanting. They both perished in about 24 hours; the tail first,

Reproduction. and afterwards the head. As to the body of the worm from which theſe pieces were ſeparated, it lived as well as before, and ſeemed indeed to ſuffer nothing by the loſs, the head-part being immediately uſed as if the head was thereof, boring the creature's way into the mud. There are, beſides this, two other points in which the reproduction will not take place; the one of theſe is about the fifth or ſixth ring from the head, and the other at the ſame diſtance from the tail; and in all probability the condition of the great artery in theſe parts is the cauſe of this.

What is ſaid of the want of the reproductive power of theſe parts relates only to the head and tail ends; for as to the body, it feels very little inconvenience from the loſs of what is taken off, and very ſpeedily reproduces theſe parts. Where then does the principle of life reſide in ſuch worms, which, after having their heads cut off, will have not only the ſame motions, but even the inclinations, that they had before? and yet this difficulty is very ſmall, compared to ſeveral others which at the ſame time offer themſelves to our reaſon. Is this wonderful reproduction of parts only a natural conſequence of the laws of motion? or is there lodged in the body of the creature a chain of minute buds or ſhoots, a ſort of little embryos, already formed and placed in ſuch parts where the reproductions are to begin? Are theſe worms only mere machines? or are they, like more perfect animals, a ſort of compound, the ſprings of whoſe motions are actuated or regulated by a ſort of ſoul? And if they have themſelves ſuch a principle, how is it that this principle is multiplied, and is found in every ſeparate piece? Is it to be granted, that there are in theſe worms, not a ſingle ſoul (if it is to be ſo called) in each, but that each contains as many ſouls as there are pieces capable of reproducing perfect animals? Are we to believe with Malpighi, that theſe ſorts of worms are all heart and brain from one end to the other! This may be; but yet if we knew that it was ſo, we ſhould know in reality but very little the more for knowing it: and it ſeems, after all, that in caſes of this kind we are only to admire the works of the great Creator, and ſit down in ſilence.

The nice ſenſe of feeling in ſpiders has been much talked of by naturaliſts; but it appears that theſe worms have yet ſomewhat more ſurpriſing in them in regard to this particular. If a piece of ſtick, or any other ſubſtance, be brought near them, they do not ſtay for its touching them, but begin to leap and friſk about as ſoon as it comes towards them. There want, however, ſome farther experiments to aſcertain whether this be really owing to feeling or to ſight; for though we can diſcover no diſtinct organs of ſight in theſe creatures, yet they ſeem affected by the light of the ſun or a candle, and always friſk about in the ſame manner at the approach of either; nay, even the moon-light has ſome effect upon them.

A twig of willow, poplar, or many other trees, being planted in the earth, takes root, and becomes a tree, every piece of which will in the ſame manner produce other trees. The caſe is the ſame with theſe worms: they are cut to pieces, and theſe ſeveral pieces become perfect animals; and each of theſe may be again cut into a number of pieces, each of which will in the ſame manner produce an animal. It had been ſuppoſed by ſome that theſe worms were oviparous: but Mr Bonett, on cutting one of them to pieces, having obſerved Reproduction. a ſlender ſubſtance, reſembling a ſmall filament, to move at the end of one of the pieces, ſeparated it; and on examining it with glaſſes, found it to be a perfect worm, of the ſame form with its parent, which lived and grew larger in a veſſel of water into which he put it. Theſe ſmall bodies are eaſily divided, and very readily complete themſelves again, a day uſually ſerving for the production of a head to the part that wants one; and, in general, the ſmaller and ſlenderer the worms are, the ſooner they complete themſelves after this operation. When the bodies of the large worms are examined by the microſcope, it is very eaſy to ſee the appearance of the young worms alive, and moving about within them: but it requires great preciſion and exactneſs to be certain of this; ſince the ramifications of the great artery have very much the appearance of young worms, and they are kept in a ſort of continual motion by the ſyſtoles and diaſtoles of the ſeveral portions of the artery, which ſerve as ſo many hearts. It is very certain, that what we force in regard to theſe animals by our operations, is done alſo naturally every day in the brooks and ditches where they live. A curious obſerver will find in theſe places many of them without heads or tails, and ſome without either; as alſo other fragments of various kinds, all which are then in the act of completing themſelves: but whether accidents have reduced them to this ſtate, or they thus purpoſely throw off parts of their own body for the reproduction of more animals, it is not eaſy to determine. They are plainly liable to many accidents, by which they loſe the ſeveral parts of their body, and muſt periſh very early if they had not a power of reproducing what was loſt: they often are broken into two pieces, by the reſiſtance of ſome hard piece of mud which they enter; and they are ſubject to a diſeaſe, a kind of gangrene, rotting off the ſeveral parts of their bodies, and muſt inevitably periſh by it, had they not this ſurpriſing property.

This worm was a ſecond inſtance, after the polype, of the ſurpriſing power in an animal of recovering its moſt eſſential parts when loſt. But Nature does not ſeem to have limited her beneficence in this reſpect to theſe two creatures. Mr Bonett tried the ſame experiments on another ſpecies of water-worm, differing from the former in being much thicker. This kind of worm, when divided in the ſummer-ſeaſon, very often ſhews the ſame property: for if it be cut into three or four pieces, the pieces will lie like dead for a long time, but afterwards will move about again; and will be found in this ſtate of reſt to have recovered a head, or a tail, or both. After recovering their parts, they move very little; and, according to this gentleman's experiments, ſeldom live more than a month.

It ſhould ſeem, that the more difficult ſucceſs of this laſt kind of worm, after cutting, and the long time it takes to recover the loſt parts, if it do recover them at all, is owing to its thickneſs; ſince we always find in that ſpecies of worms which ſucceeds beſt of all, that theſe which are thinneſt always recover their parts much ſooner than the others.

The water inſects alſo are not the only creatures which have this power of recovering their loſt parts. The earth affords us ſome already diſcovered to grow in this manner from their cuttings, and theſe not leſs deſerving our admiration than theſe of the water: the common

Reproduction.

common earth-worms are of this kind. Some of theſe worms have been divided into two, others into three or four pieces; and ſome of theſe pieces, after having paſſed two or three months without any appearance of life or motion, have then begun to reproduce a head or tail or both. The reproduction of the anus, after ſuch a ſtate of reſt, is no long work; a few days do it: but it is otherwiſe with the head, that does not ſeem to perform its functions in the divided pieces till about ſeven months after the ſeparation. It is to be obſerved, that in all theſe operations both on earth and water-worms, the hinder part ſuffers greatly more than the fore part in the cutting; for it always twiſts itſelf about a long time, as if actuated by ſtrong convulſions; whereas the head uſually crawls away without the appearance of any great uneaſineſs.

The reproduction of ſeveral parts of lobſters, crabs, &c. makes alſo one of the great curioſities in natural hiſtory. That, in lieu of an organical part of an animal broken off, another ſhall riſe perfectly like it, may ſeem inconſiſtent with the modern ſyſtem of generation, where the animal is ſuppoſed to be wholly formed in the egg. Yet has the matter of fact been well atteſted by the fiſhermen, and even by ſeveral virtuoſi who have taken the point into examination, particularly M. de Reaumur and M. Perrault, whoſe ſkill and exactneſs in things of this nature will hardly be queſtioned. The legs of lobſters, &c. conſiſt each of five articulations: now, when any of the legs happen to break by any accident, as in walking, &c. which frequently happens, the fracture is always found to be in a part near the fourth articulation; and what they thus loſe is preciſely reproduced ſome time afterwards; that is, a part of a leg ſhoots out, conſiſting of four articulations, the firſt whereof has two claws as before; ſo that the loſs is entirely repaired.

If a lobſter's leg be broken off by deſign at the fourth or fifth articulation, what is thus broken off always comes again; but it is not ſo if the fracture be made in the firſt, ſecond, or third articulation. In thoſe caſes, the reproduction is very rare if things continue as they are. But what is exceedingly ſurpriſing is, that they do not; for, upon viſiting the lobſter maimed in theſe barren and unhappy articulations, at the end of two or three days, all the other articulations are found broken off to the fourth; and it is ſuſpected they have performed the operation on themſelves, to make the reproduction of a leg certain.

The part reproduced is not only perfectly like that retrenched, but alſo, in a certain ſpace of time, grows equal to it. Hence it is that we frequently ſee lobſters, which have their two big legs unequal, and that in all proportions. This ſhows the ſmaller leg to be a new one.

A part thus reproduced being broken, there is a ſecond reproduction. The ſummer, which is the only ſeaſon of the year when the lobſters eat, is the moſt favourable time for the reproduction. It is then performed in four or five weeks; whereas it takes up eight or nine months in any other ſeaſon. The ſmall legs are ſometimes reproduced; but more rarely, as well as more ſlowly, than the great ones: the horns do the ſame. The experiment is moſt eaſily tried on the common crab. See Metaphysics, p. 574. note (F); and Physiology, n° 261.

Reptiles ‖ Repulſion.

REPTILES, in natural hiſtory, a kind of animals denominated from their creeping or advancing on the belly. Or reptiles are a genus of animals and inſects, which, inſtead of feet, reſt on one part of the body, while they advance forward with the reſt. Such are earthworms, ſnakes, caterpillars, &c. Indeed, moſt of the claſs of reptiles have feet; only thoſe very ſmall, and the legs remarkably ſhort in proportion to the bulk of the body.

Naturaliſts obſerve a world of artful contrivance for the motion of reptiles. Thus, particularly in the earthworm, Dr Willis tells us, the whole body is only a chain of annular muſcles; or, as Dr Derham ſays, it is only one coutinued ſpiral muſcle, the orbicular fibres whereof being contracted, render each ring narrower and longer than before; by which means it is enabled, like the worm of an augre, to bore its paſſage into the earth. Its reptile motion might alſo be explained by a wire wound on a cylinder, which when ſlipped off, and one end extended and held faſt, will bring the other near to it. So the earthworm having ſhot out or extended his body (which is with a wreathing), it takes hold by theſe ſmall feet it hath, and ſo contracts the hinder part of its body. Dr Tyſon adds, that when the forepart of the body is ſtretched out, and applied to a plane at a diſtance, the hind part relaxing and ſhortening is eaſily drawn towards it as a centre.

Its feet are diſpoſed in a quadruple row the whole length of the worm, with which, as with ſo many hooks, it faſtens down ſometimes this and ſometimes that part of the body to the plane, and at the ſame time ſtretches out or drags after it another.

The creeping of ſerpents is effected after a ſomewhat different manner; there being a difference in their ſtructure, in that theſe laſt have a compages of bones articulated together.

The body here is not drawn together, but as it were complicated; part of it being applied on the rough ground, and the reſt ejaculated and ſhot from it, which being ſet on the ground in its turn, brings the other after it. The ſpine of the back variouſly wreathed has the ſame effect in leaping, as the joints in the feet of other animals; they make their leaps by means of muſcles, and extend the plicæ or folds. See Zoology.

REBUBLIC, or commonwealth, a popular ſtate or government; or a nation where the people have the government in their own hands. See Government, Aristocracy, Democracy, and Monarchy.

Republic of Letters, a phraſe uſed collectively of the whole body of the ſtudious and learned people.

REPUDIATION, in the civil law, the act of divorcing. See Divorce.

REPULSION, in phyſics, that property of bodies whereby they recede from each other, and, on certain occaſions, mutually avoid coming into contact.

Repulsion, as well as attraction, has of late been conſidered as one of the primary qualities of all matter, and has been much uſed in explaining the phenomena of nature: thus the particles of air, fire, ſteam, electric fluid, &c. are all ſaid to have a repulſive power with reſpect to one another.—That this is the caſe with the air, and vapour of all kinds, is certain; becauſe when they are compreſſed into a ſmall ſpace, they expand

with

Reputation. Request.

with great force: but as to fire, light, and electricity, our experiments fail: nay, the supposition of a repulsive power among the particles of the electric fluid is inconsistent with the phenomena, as has been demonstrated under the article ELECTRICITY, Sect. V. and VI. Even in those fluids, air and steam, where a repulsive power must manifestly exist, it is demonstrable that the repulsion cannot be a *primary* quality, since it can be increased to a great degree by heat, and diminished by cold: but it is impossible that a *primary* quality of matter can be increased or diminished by any external circumstances whatever; for whatever property depends upon external circumstances, is not a primary but a secondary one.—The repulsion of electrified bodies is explained under the article ELECTRICITY: that of others is less subject to investigation; and the most that can be said concerning it is, that in many cases it seems to be the consequence of a modification of fire, and in others of electricity.

REPUTATION means credit, honour, or the character of good; and since we are destined to live in society, is necessary and useful more or less to every human being. There is no man, except one who is overgrown with pride and self conceit, or whose actions are bad, but pays attention to his reputation, and wishes to possess the good opinion of his neighbours or the world. The love of reputation and of fame are most powerful springs of action; but though they proceed from the same principle, the means of attaining them, and the effects of them, are not altogether the same.

Many means indeed serve equally to support the reputation and to increase the fame, differing only in degrees; others, however, belong peculiarly either to the one or to the other. An honest reputation is within the reach of the bulk of mankind; it is obtained by the social virtues and the constant practice of the common duties of life. This kind of reputation indeed is neither extensive nor brilliant, but it is often the most useful in point of happiness. Wit, talents, and genius, are the necessary requisites for fame; but those advantages are perhaps less real in their consequences than those arising from a good reputation. What is of real use costs little; things rare and splended require the greatest labour to procure, and yield perhaps a more ideal happiness.

Fame can be possessed, comparatively speaking, but by few individuals; as it requires either very superior abilities, supported by great efforts, or very fortunate circumstances. It is constituted by the applause of mankind, or at least by that of a single nation; whilst reputation is of much less extent, and arises from different circumstances. That reputation which is founded on deceit and artifice is never solid; and the most honourable will always be found to be the most useful. Every one may safely, and indeed ought to, aspire to the consideration and praise due to his condition and merit; but he who aspires to more, or who seeks it by dishonest means, will at length meet with contempt.

REQUEST, in law, a supplication or petition preferred to a prince, or to a court of justice; begging relief in some conscionable cases where the common law grants no immediate redress.

Court of Requests (curia requisitionum) was a court of equity, of the same nature with the court of chancery, but inferior to it; principally instituted for the relief of such petitioners as in conscionable cases addressed themselves by supplication to his majesty. Of this court the lord privy-seal was chief judge, assisted by the masters of requests; and it had beginning about the 9 Hen. VII. according to Sir Julius Cæsar's tractate upon this subject: though M: Gwyn, in his preface to his Readings, saith it began from a commission first granted by king Henry VIII.—This court, having assumed great power to itself, so that it became burthensome, *Mich.* anno 40 and 41 *Eliz.* in the court of common pleas it was adjudged upon solemn argument, that the court of requests was no court of judicature, &c. and by stat. 16 & 17 Car. I. c. 10. it was taken away.

Request. Blackst. Comment.

There are still courts of request, or courts of conscience, constituted in London and other trading and populous districts for the recovery of small debts. The first of these was established in London so early as the reign of Henry VIII. by an act of their common council; which however was certainly insufficient for that purpose, and illegal, till confirmed by statute 3 Jac. I. c. 15. which has since been explained and amended by statute 14 Geo. II. c. 10. The constitution is this: two aldermen and four commoners sit twice a week to hear all causes of debt not exceeding the value of forty shillings; which they examine in a summary way, by the oath of the parties or other witnesses, and make such order therein as is consistent to equity and good conscience. The time and expence of obtaining this summary redress are very inconsiderable, which make it a great benefit to trade; and thereupon divers trading towns and other districts have obtained acts of parliament for establishing in them courts of conscience upon nearly the same plan as that in the city of London.

By 25 Geo. III. c. 45. (which is confined to prosecutions in courts of conscience in London, Middlesex, and the borough of Southwark), and by 26 Geo. III. c. 38. (which extends the provisions of the former act to all other courts instituted for the recovery of small debts), it is enacted, that after the first day of September 1786, no person whosoever, being a debtor or defendant, and who has been or shall be committed to any gaol or prison by order of any court or commissioners authorised by any act or acts of parliament for constituting or regulating any court or courts for the recovery of small debts, where the debt does not exceed twenty shillings, shall be kept or continued in custody, on any pretence whatsoever, more than twenty days from the commencement of the last mentioned act; or from the time of his, her, or their commitment to prison: and where the original debt does not amount to or exceed the sum of forty shillings, more than forty days from the commencement of the said act, or from the time of his, her, or their commitment as aforesaid; and all gaolers are thereby required to discharge such persons accordingly. And by sect. 2. if it shall be proved to the satisfaction of the court, that any such debtor has money or goods which he has wilfully and fraudulently concealed: in that case the court shall have power to enlarge the aforesaid times of imprisonment for debts under twenty shillings, to any time not exceeding thirty days, and for debts under forty shillings, to any time not exceeding sixty days; which said ground of farther detention shall be specified in the said commitment. And that (by sect. 5.) at the expiration of the said respective times of imprisonment, every such person shall immediately be discharged, without paying any sum of money,

Requiem || Reſeda.

money, or other reward or gratuity whatſoever, to the gaoler of ſuch gaol on any pretence whatſoever; and every gaoler demanding or receiving any fee for the diſcharge of any ſuch perſon, or keeping any ſuch perſon priſoner after the ſaid reſpective times limited by the ſaid act, ſhall forfeit five pounds, to be recovered in a ſummary way before two juſtices of the peace, one moiety thereof to be paid to the overſeers of the poor of the pariſh where the offence ſhall be committed, and the other to the informer.

REQUIEM, in the Romiſh hiſtory, a maſs ſung for the reſt of the ſoul of a perſon deceaſed.

RESCISSION, in the civil law, an action intended for the annulling or ſetting aſide any contract, deed, &c.

RESCRIPT, an anſwer delivered by an emperor, or a pope, when conſulted by particular perſons on ſome difficult queſtion or point of law, to ſerve as a deciſion thereof.

RESEDA, DYER'S-WEED, *Yellow-weed*, *Weld*, or *Wild-woad*: A genus of the order of trigynia, belonging to the dodecandria claſs of plants; and in the natural method ranking under the 54th order, *Miſcellaneæ*. The calyx is monophyllous and partite; the petals lanciniated; the capſule unilocular, and opening at the mouth. There are 11 ſpecies; of which the moſt remarkable is the luteola or common dyer's weed, growing naturally in waſte places in many parts of Britain. The young leaves are often undulated; the ſtalk is a yard high, or more, terminated with a long naked ſpike of yellowiſh-green flowers: the plant is cultivated and much uſed for dyeing ſilk and wool of a yellow colour. The great recommendation of the plant is, that it will grow with very little trouble, without dung, and on the very worſt ſoils. For this reaſon it is commonly ſown with, or immediately after, barley or oats, without any additional care, except drawing a buſh over it to harrow it in. The reaping of the corn does it little or no hurt, as it grows but little the firſt year; and the next ſummer it is pulled and dried like flax. Much care and nicety, however, is requiſite, ſo as not to injure either the ſeed or ſtalk; or, which ſometimes happens, damaging both, by letting it ſtand too long, or pulling it too green. To avoid theſe inconveniences, a better method of culture has been deviſed. This new method is to plough and harrow the ground very fine, without dung, as equally as poſſible, and then ſowing about a gallon of ſeed, which is very ſmall, upon an acre, ſome time in the month of Auguſt. In about two months it will be high enough to hoe, which muſt be carefully done, and the plants left about ſix inches aſunder. In March it is to be hoed again, and this labour is to be repeated a third time in May. About the cloſe of June, when the flower is in full vigour, and the ſtalk is become of a greeniſh-yellow, it ſhould be pulled; a ſufficient quantity of ſtems being left growing for ſeed till September. By this means the flower and ſtalk, both of them being carefully dried, will ſell at a good price to the dyers, who employ it conſtantly, and in large quantities; add to this, that the ſeed being ripe and in perfect order, will yield a very conſiderable profit. In a tolerable year, when the ſeaſons have not been unfavourable, the advantages derived from this vegetable will anſwer very well; but if the ſummer ſhould be remarkably fine, and proper care is taken in getting it in, there will be a very large produce upon an acre. The crop being, as has been ſhown, ſo early removed, the ground may be conveniently prepared for growing wheat the next year. Upon the whole, weld is in its nature a very valuable commodity in many reſpects, as it ſerves equally for woollen, linen, or ſilk; dyeing not only a rich and laſting yellow, but alſo, properly managed, all the different ſhades of yellow with brightneſs and beauty; and if theſe be previouſly dipped blue, they are by the weld changed into a very pleaſing green, which the artiſts can alſo diverſify into a great variety of ſhades.

R ſemblance.

RESEMBLANCE, and DISSIMILITUDE, the relations of likeneſs and difference among objects. See COMPARISON.

The connection that man hath with the beings around him, requires ſome acquaintance with their nature, their powers, and their qualities, for regulating his conduct. For acquiring a branch of knowledge ſo eſſential to our well-being, motives alone of reaſon and intereſt are not ſufficient: nature hath providentially ſuperadded curioſity, a vigorous propenſity, which never is at reſt. This propenſity alone attaches us to every new object †; and incites us to compare objects, in order to diſcover their differences and reſemblances.

Elem. of Criticiſm.

† See Novelty.

Reſemblance among objects of the ſame kind, and diſſimilitude among objects of different kinds, are too obvious and familiar to gratify our curioſity in any degree: its gratification lies in diſcovering differences among things where reſemblance prevails, and reſemblances where difference prevails. Thus a difference in individuals of the ſame kind of plants or animals, is deemed a diſcovery, while the many particulars in which they agree are neglected; and in different kinds, any reſemblance is generally remarked, without attending to the many particulars in which they differ.

A compariſon of the former neither tends to gratify our curioſity, nor to ſet the objects compared in a ſtronger light: two apartments in a palace, ſimilar in ſhape, ſize, and furniture, make ſeparately as good a figure as when compared; and the ſame obſervation is applicable to two ſimilar compartments in a garden: on the other hand, oppoſe a regular building to a fall of water, or a good picture to a towering hill, or even a little dog to a large horſe, and the contraſt will produce no effect. But a reſemblance between objects of different kinds, and a difference between objects of the ſame kind, have remarkably an enlivening effect. The poets, ſuch of them as have a juſt taſte, draw all their ſimiles from things that in the main differ widely from the principal ſubject; and they never attempt a contraſt, but where the things have a common genus, and a reſemblance in the capital circumſtances: place together a large and a ſmall-ſized animal of the ſame ſpecies, the one will appear greater, the other leſs, than when viewed ſeparately: when we oppoſe beauty to deformity, each makes a greater figure by the compariſon. We compare the dreſs of different nations with curioſity, but without ſurpriſe; becauſe they have no ſuch reſemblance in the capital parts as to pleaſe us by contraſting the ſmaller parts. But a new cut of a ſleeve, or of a pocket, enchants by its novelty; and, in oppoſition to the former faſhion, raiſes ſome degree of ſurpriſe.

That reſemblance and diſſimilitude have an enliven-

ing

Reſem-blance.

That have been wretched: but to think how much I have been happier.

Southern's Innocent Adultery, act 2.

The diſtreſs of a long journey makes even an indifferent inn agreeable: and, in travelling, when the road is good, and the horſeman well covered, a bad day may be agreeable, by making him ſenſible how ſnug he is.

The ſame effect is equally remarkable, when a man oppoſes his condition to that of others. A ſhip toſſed about in a ſtorm, makes the ſpectator reflect upon his own eaſe and ſecurity, and puts theſe in the ſtrongeſt light.

A man in grief cannot bear mirth; it gives him a more lively notion of his unhappineſs, and of courſe makes him more unhappy. Satan, contemplating the beauties of the terreſtial paradiſe, has the following exclamation:

With what delight could I have walk'd thee round,
If I could joy in aught, ſweet interchange
Of hill and valley, rivers, woods, and plains,
Now land, now ſea, and ſhores with foreſt crown'd,
Rocks, dens, and caves! but I in none of theſe
Find place or refuge; and the more I ſee
Pleaſures about me, ſo much more I feel
Torment within me, as from the hateful ſiege
Of contraries: all good to me becomes
Bane, and in heav'n much worſe would be my ſtate.

Paradiſe Loſt, book 9. *l.* 114.

The appearance of danger gives ſometimes pleaſure, ſometimes pain. A timorous perſon upon the battlements of a high tower, is ſeized with fear, which even the conſciouſneſs of ſecurity cannot diſſipate. But upon one of a firm head, this ſituation has a contrary effect: the appearance of danger heightens, by oppoſition, the conſciouſneſs of ſecurity, and conſequently the ſatisfaction that ariſes from ſecurity: here the feeling reſembles that abovementioned, occaſioned by a ſhip labouring in a ſtorm.

The effect of magnifying or leſſening objects by means of compariſon is to be attributed to the influence of paſſion over our opinions. This will evidently appear by reflecting in what manner a ſpectator is affected, when a very large animal is for the firſt time placed beſide a very ſmall one of the ſame ſpecies. The firſt thing that ſtrikes the mind is the difference between the two animals, which is ſo great as to occaſion ſurpriſe; and this, like other emotions, magnifyng its object, makes us conceive the difference to be the greateſt that can be: we ſee, or ſeem to ſee, the one animal extremely little, and the other extremely large. The emotion of ſurpriſe ariſing from any unuſual reſemblance, ſerves equally to explain, why at firſt view we are apt to think ſuch reſemblance more entire than it is in reality. And it muſt be obſerved, that the circumſtances of more and leſs, which are the proper ſubjects of compariſon, raiſe a perception ſo indiſtinct and vague as to facilitate the effect deſcribed; we have no mental ſtandard of great and little, nor of the ſeveral degrees of any attribute; and the mind, thus unreſtrained, is naturally diſpoſed to indulge its ſurpriſe to the utmoſt extent.

In exploring the operations of the mind, ſome of which are extremely nice and ſlippery, it is neceſſary

to

Paſſions and emotions are alſo enflamed by compariſon. A man of high rank humbles the byſtanders even to annihilate them in their own opinion: Cæſar, beholding the ſtatue of Alexander, was greatly mortified, that now, at the age of 32, when Alexander died, he had not performed one memorable action.

Our opinions alſo are much influenced by compariſon. A man whoſe opulence exceeds the ordinary ſtandard is reputed richer than he is in reality; and wiſdom or weakneſs, if at all remarkable in an individual, is generally carried beyond the truth.

The opinion a man forms of his preſent diſtreſs is heightened by contraſting it with his former happineſs:

——————————Could I forget
What I have been, I might the better bear
What I'm deſtin'd to. I'm not the firſt

Reſemblance.

to proceed with the utmoſt circumſpection: and after all, ſeldom it happens that ſpeculations of that kind afford any ſatisfaction. Luckily, in the preſent caſe, our ſpeculations are ſupported by facts and ſolid argument. Firſt, a ſmall object of one ſpecies oppoſed to a great object of another, produces not, in any degree, that deception which is ſo remarkable when both objects are of the ſame ſpecies. The greateſt diſparity between objects of different kinds, is ſo common as to be obſerved with perfect indifference; but ſuch diſparity between the objects of the ſame kind being uncommon, never fails to produce ſurpriſe: and may we not fairly conclude, that ſurpriſe, in the latter caſe, is what occaſions the deception, when we find no deception in the former? In the next place, if ſurpriſe be the ſole cauſe of the deception, it follows neceſſarily that the deception will vaniſh as ſoon as the objects compared become familiar. This holds ſo unerringly, as to leave no reaſonable doubt that ſurpriſe is the prime mover: our ſurpriſe is great, the firſt time a ſmall lapdog is ſeen with a large maſtiff; but when two ſuch animals are conſtantly together, there is no ſurpriſe, and it makes no difference whether they be viewed ſeparately or in company. We ſet no bounds to the riches of a man who has recently made his fortune; the ſurpriſing diſproportion between his preſent and his paſt ſituation being carried to an extreme: but with regard to a family that for many generations hath enjoyed great wealth, the ſame falſe reckoning is not made. It is equally remarkable, that a trite ſimile has no effect: a lover compared to a moth ſcorching itſelf at the flame of a candle, originally a ſprightly ſimile, has by frequent uſe loſt all force; love cannot now be compared to fire, without ſome degree of diſguſt. It has been juſtly obſerved againſt Homer, that the lion is too often introduced into his ſimiles; all the variety he is able to throw into them not being ſufficient to keep alive the reader's ſurpriſe.

To explain the influence of compariſon upon the mind, we have choſen the ſimpleſt caſe, viz. the firſt ſight of two animals of the ſame kind, differing in ſize only; but to complete the theory, other circumſtances muſt be taken in. And the next ſuppoſition we make, is where both animals, ſeparately familiar to the ſpectator, are brought together for the firſt time. In that caſe, the effect of magnifying and diminiſhing is found remarkably greater than in that firſt mentioned; and the reaſon will appear upon analyſing the operation: the firſt feeling we have is of ſurpriſe at the uncommon difference of two creatures of the ſame ſpecies; we are next ſenſible, that the one appears leſs, the other larger, than they did formerly; and that new circumſtance increaſing our ſurpriſe, makes us imagine a ſtill greater oppoſition between the animals, than if we had formed no notion of them beforehand.

Let us make o e other ſuppoſition, that the ſpectator was acquainted beforehand with one of the animals only; the lapdog, for example. This new circumſtance will vary the effect; for, inſtead of widening the natural difference, by enlarging in appearance the one animal, and diminiſhing the other in proportion, the whole apparent alteration will reſt upon the lapdog: the ſurpriſe to find it leſs than it appeared formerly, directs to it our whole attention, and makes us conceive it to be a moſt diminutive creature: the maſtiff in the mean time is quite overlooked. To illuſtrate this effect by a familiar example. Take a piece of paper or of linen tolerably white, and compare it with a pure white of the ſame kind: the judgment we formed of the firſt object is inſtantly varied; and the ſurpriſe occaſioned by finding it leſs white than was thought, produced a haſty conviction that it is much leſs white than it is in reality: withdrawing now the pure white, and putting in its place a deep black, the ſurpriſe occaſioned by that new circumſtance carries us to the other extreme, and makes us conceive the object firſt mentioned to be a pure white: and thus experience compels us to acknowledge, that our emotions have an influence even upon our eye-ſight. This experiment leads to a general obſervation, that whatever is found more ſtrange and beautiful than was expected, is judged to be more ſtrange and beautiful than it is in reality. Hence a common artifice, to depreciate beforehand what we wiſh to make a figure in the opinion of others.

Reſemblance.

The compariſons employed by poets and orators are of the kind laſt mentioned; for it is always a known object that is to be magnified or leſſened. The former is effected by likening it to ſome grand object, or by contraſting it with one of an oppoſite character. To effectuate the latter, the method muſt be reverſed: the object muſt be contraſted with ſomething ſuperior to it, or likened to ſomething inferior. The whole effect is produced upon the principal object; which by that means is elevated above its rank, or depreſſed below it.

In accounting for the effect that any unuſual reſemblance or diſſimilitude hath upon the mind, no cauſe has been mentioned but ſurpriſe; and to prevent confuſion, it was proper to diſcuſs that cauſe firſt. But ſurpriſe is not the only cauſe of the effect deſcribed: another occurs, which operates perhaps not leſs powerfully, viz. a principle in human nature that lies ſtill in obſcurity, not having been unfolded by any writer, though its effects are extenſive: and as it is not diſtinguiſhed by a proper name, the reader muſt be ſatisfied with the following deſcription. Every man who ſtudies himſelf or others, muſt be ſenſible of a tendency or propenſity in the mind to complete every work that is begun, and to carry things to their full perfection. There is little opportunity to diſplay that propenſity upon natural operations, which are ſeldom left imperfect; but in the operations of art it hath great ſcope: it impels us to perſevere in our own work, and to wiſh for the completion of what another is doing: we feel a ſenſible pleaſure when the work is brought to perfection; and our pain is not leſs ſenſible when we are diſappointed. Hence our uneaſineſs when an intereſting ſtory is broken off in the middle, when a piece of muſic ends without a cloſe, or when a building or garden is left unfiniſhed. The ſame propenſity operates in making collections; ſuch as the whole works, good and bad, of any author. A certain perſon attempted to collect prints of all the capital paintings, and ſucceeded except as to a few. La Bruyere remarks, that an anxious ſearch was made for theſe; not for their value, but to complete the ſet.

The final cauſe of the propenſity is an additional proof of its exiſtence. Human works are of no ſignificancy till they be completed; and reaſon is not always a ſufficient counterbalance to indolence: ſome principle

Reſemblance.

ciple over and above is neceſſary to excite our induſtry, and to prevent our ſtopping ſhort in the middle of the courſe.

We need not loſe time to deſcribe the co-operation of the foregoing propenſity with ſurpriſe, in producing the effect that follows any unuſual reſemblance or diſſimilitude. Surpriſe firſt operates, and carries our opinion of the reſemblance or diſſimilitude beyond truth. The propenſity we have been deſcribing carries us ſtill farther; for it forces upon the mind a conviction, that the reſemblance or diſſimilitude is complete. We need no better illuſtration, than the reſemblance that is fancied in ſome pebbles to a tree or an inſect; which reſemblance, however wide in reality, is conceived to be wonderfully perfect. The tendency to complete a reſemblance acting jointly with ſurpriſe, carries the mind ſometimes to err, as even to preſume upon future events. In the Greek tragedy entitled *Phrixus*, thoſe unhappy women ſeeing the place where it was intended they ſhould be ſlain, cried out with anguiſh, "They now ſaw their cruel deſtiny had condemned them to die in that place, being the ſame where they had been expoſed in their infancy." Arift. Poet. cap. 16.

The propenſity to advance every thing to its perfection, not only co-operates with ſurpriſe to deceive the mind, but of itſelf is able to produce that effect. Of this we ſee many inſtances where there is no place for ſurpriſe; and the firſt we ſhall give is of reſemblance. *Unumquodque eodem modo diſſolvitur quo colligatum eſt*, is a maxim in the Roman law that has no foundation in truth; for tying and looſing, building and demoliſhing, are acts oppoſite to each other, and are performed by oppoſite means: but when theſe acts are connected by their relation to the ſame ſubject, their connection leads us to imagine a ſort of reſemblance between them, which by the foregoing propenſity is conceived to be as complete as poſſible. The next inſtance ſhall be of contraſt. Addiſon obſerves, "That the paleſt features look the moſt agreeable in white; that a face which is overflu̇ſhed appears to advantage in the deepeſt ſcarlet; and that a dark complexion is not a little alleviated by a black hood." Spectator, no 265. The foregoing propenſity ſerves to account for theſe appearances; to make this evident, one of the caſes ſhall ſuffice. A complexion, however dark, never approaches to black: when theſe colours appear together, their oppoſition ſtrikes us; and the propenſity we have to complete the oppoſition, makes the darkneſs of complexion vaniſh out of ſight.

The operation of this propenſity, even where there is no ground for ſurpriſe, is not confined to opinion or conviction: ſo powerful it is, as to make us ſometimes proceed to action, in order to complete a reſemblance or diſſimilitude. If this appear obſcure, it will be made clear by the following inſtance. Upon what principle if the *lex talionis* founded, other than to make the puniſhment reſemble the miſchief? Reaſon dictates, that there ought to be a conformity or reſemblance between a crime and its puniſhment; and the foregoing propenſity impels us to make the reſemblance as complete as poſſible. Titus Livius ‖, under the influence of that propenſity, accounts for a certain puniſhment by a reſemblance between it and the crime, too ſubtile for common apprehenſion. Speaking of Mettus Fuffetius, the Alban general, who, for treachery to the Romans his allies, was ſentenced to be torn to pieces by horſes, he puts the following ſpeech in the mouth of Tullus Hoſtilius, who decreed the puniſhment "*Mette Fuffeti, inquit, ſi ipſe diſcere potuiſſes fidem ac fœdera ſervare, vivo tibi ea diſciplina a me adhibita eſſet. Nunc, quoniam tuum inſanabile ingenium eſt, at tu tuo ſupplicio doce hominum genus ea ſancta credere, quæ a te violata ſunt. Ut igitur paulo ante animum inter Fidenatem Romanamque rem ancipitem ſuſpenſi, ita non corpus paſſim diſtrahendum dabo.*" By the ſame influence, the ſentence is often executed upon the very ſpot where the crime was committed. In the *Electra* of Sophocles, Egiſtheus is dragged from the theatre into an inner room of the ſuppoſed palace, to ſuffer death where he murdered Agamemnon. Shakeſpeare, whoſe knowledge of nature is not leſs profound than extenſive, has not overlooked this propenſity. Lib. I. c. 28.

"*Othello.* Get me ſome poiſon, Iago, this night. I'll not expoſtulate with her, leſt her body and her beauty unprovide my mind again. This night, Iago."

"*Iago.* Do it not with poiſon; ſtrangle her in her bed, even in the bed ſhe hath contaminated."

"*Othello.* Good, good: the juſtice of it pleaſes: very good." *Othello, act 4. ſc. 5.*

Perſons in their laſt moments are generally ſeized with an anxiety to be buried with their relations. In the *Amynta* of Taſſo, the lover, hearing that his miſtreſs was torn to pieces by a wolf, expreſſes a deſire to die the ſame death.

Upon the ſubject in general we have two remarks to add. The firſt concerns reſemblance, which, when too entire, hath no effect, however different in kind the things compared may be. The remark is applicable to works of art only; for natural objects of different kinds have ſcarce ever an entire reſemblance. To give an example in a work of art: Marble is a ſort of matter very different from what compoſes an animal; and marble cut into a human figure, produces great pleaſure by the reſemblance: but if a marble ſtatue be coloured like a picture, the reſemblance is ſo entire as at a diſtance to make the ſtatue appear a real perſon: we diſcover the miſtake when we approach; and no other emotion is raiſed, but ſurpriſe occaſioned by the deception: the figure ſtill appears a real perſon, rather than an imitation; and we muſt uſe reflection to correct the miſtake. This cannot happen in a picture; for the reſemblance can never be ſo entire as to diſguiſe the imitation.

The other remark belongs to contraſt. Emotions make the greateſt figure when contraſted in ſucceſſion; but then the ſucceſſion ought neither to be rapid, nor immoderately ſlow: if too ſlow, the effect of contraſt becomes faint by the diſtance of the emotions; and if rapid, no ſingle emotion has room to expand itſelf to its full ſize, but is ſtifled, as it were, in the birth by a ſucceeding emotion. The funeral oration of the biſhop of Meaux upon the ducheſs of Orleans, is a perfect hodge-podge of cheerful and melancholy repreſentations, following each other in the quickeſt ſucceſſion: oppoſite emotions are beſt felt in ſucceſſion; but each emotion ſeparately ſhould be raiſed to its due pitch, before another be introduced.

What

Reſemblance.

What is above laid down, will enable us to determine a very important queſtion concerning emotions raiſed by the fine arts, viz. Whether ought ſimilar emotions to ſucceed each other, or diſſimilar? The emotions raiſed by the fine arts are for the moſt part too nearly related to make a figure by reſemblance; and for that reaſon their ſucceſſion ought to be regulated as much as poſſible by contraſt. This holds confeſſedly in epic and dramatic compoſitions; and the beſt writers, led perhaps by taſte more than by reaſoning, have generally aimed at that beauty. It holds equally in muſic: in the ſame cantata all the variety of emotions that are within the power of muſic, may not only be indulged, but, to make the greateſt figure, ought to be contraſted. In gardening, there is an additional reaſon for the rule: the emotions raiſed by that art, are at beſt ſo faint, that every artifice ſhould be employed to give them their utmoſt vigour: a field may be laid out in grand, ſweet, gay, neat, wild, melancholy ſcenes; and when theſe are viewed in ſucceſſion, grandeur ought to be contraſted with neatneſs, regularity with wildneſs, and gaiety with melancholy, ſo as that each emotion may ſucceed its oppoſite: nay, it is an improvement to intermix in the ſucceſſion rude uncultivated ſpots as well as unbounded views, which in themſelves are diſagreeable, but in ſucceſſion heighten the feeling of the agreeable object; and we have nature for our guide, which in her moſt beautiful landſcapes often intermixes rugged rocks, dirty marſhes, and barren ſtony heaths. The greateſt maſters of muſic have the ſame view in their compoſitions: the ſecond part of an Italian ſong ſeldom conveys any ſentiment: and, by its harſhneſs, ſeems purpoſely contrived to give a greater reliſh for the intereſting parts of the compoſition.

A ſmall garden, comprehended under a ſingle view, affords little opportunity for that embelliſhment. Diſſimilar emotions require different tones of mind; and therefore in conjunction can never be pleaſant: gaiety and ſweetneſs may be combined, or wildneſs and gloomineſs; but a compoſition of gaiety and gloomineſs is diſtaſteful. The rude uncultivated compartment of furze and broom in Richmond garden, hath a good effect in the ſucceſſion of objects; but a ſpot of that nature would be inſufferable in the midſt of a poliſhed parterre or flower-pot. A garden, therefore, if not of great extent, admits not diſſimilar emotions; and in ornamenting a ſmall garden, the ſafeſt courſe is to confine it to a ſingle expreſſion. For the ſame reaſon, a landſcape ought alſo to be confined to a ſingle expreſſion; and accordingly it is a rule in painting, that if the ſubject be gay, every figure ought to contribute to that emotion.

It follows from the foregoing train of reaſoning, that a garden near a great city ought to have an air of ſolitude. The ſolitarineſs, again, of a waſte country ought to be contraſted in forming a garden; no temples, no obſcure walks; but *jets d'eau*, caſcades, objects active, gay, and ſplendid. Nay, ſuch a garden ſhould in ſome meaſure avoid imitating nature, by taking on an extraordinary appearance of regularity and art, to ſhow the buſy hand of man, which in a waſte country has a fine effect by contraſt.

Wit and ridicule make not an agreeable mixture with grandeur. Diſſimilar emotions have a fine effect in a ſlow ſucceſſion; but in a rapid ſucceſſion, which approaches to co-exiſtence, they will not be reliſhed. In the midſt of a laboured and elevated deſcription of battle, Virgil introduces a ludicrous image, which is certainly out of its place:

Reſemblance.

Reſervation.

> Obvius ambuſtum torrem Chorinæus ab ara
> Corripit, et venienti Ebuſo plagamque ferenti
> Occupat os flammis: illi ingens barba reluxit,
> Nidoremque ambuſta dedit. *Æn.* xii. 298.

> E qual tauro ferito, il ſuo dolore
> Verſo mugghiando e ſoſpirando fuore.
> *Gieruſal.* cant. 4. ſt. 1.

It would however be too auſtere to baniſh altogether ludicrous images from an epic poem. This poem doth not always ſoar above the clouds: it admits great variety; and upon occaſion can deſcend even to the ground without ſinking. In its more familiar tones, a ludicrous ſcene may be introduced without impropriety. This is done by Virgil * in a foot-race: the circumſtances of which, not excepting the ludicrous part, are copied from Homer †. After a fit of merriment, we are, it is true, the leſs diſpoſed to the ſerious and ſublime: but then, a ludicrous ſcene, by unbending the mind from ſevere application to more intereſting ſubjects, may prevent fatigue, and preſerve our reliſh entire.

* Eneid, lib. v.

† Iliad, xxiii. 879.

RESEN, (Moſes); a town on the Tigris, built by Nimrod; thought to be the *Lariſſa* of Xenophon; which ſee. But as *Lariſſa* is a name in imitation of a Greek city; and as there were no Greek cities, conſequently no *Lariſſa* in Aſſyria, before Alexander the Great; it is probable that the Greeks aſking of what city thoſe were the ruins they ſaw, the Aſſyrians might anſwer, *Lareſen*, "Of *Reſen*;" which word Xenophon expreſſed by *Lariſſa*, a more familiar ſound to a Greek ear, (Wells).

RESENTMENT, means a ſtrong perception of good or ill, generally a deep ſenſe of injury, and may be diſtinguiſhed into *anger* and *revenge*. "By anger (ſays Archdeacon Paley), I mean the pain we ſuffer upon the receipt of an injury or affront, with the uſual effects of that pain upon ourſelves. By revenge, the inflicting of pain upon the perſon who has injured or offended us, farther than the juſt ends of puniſhment or reparation require. Anger prompts to revenge; but it is poſſible to ſuſpend the effect when we cannot altogether quell the principle. We are bound alſo to endeavour to qualify and correct the principle itſelf. So that our duty requires two different applications of the mind: and for that reaſon anger and revenge ſhould be conſidered ſeparately." See Revenge.

RESERVATION, in law, an action or clauſe whereby ſomething is reſerved, or ſecured to one's ſelf.

Mental Reservation, a propoſition which, ſtrictly taken, and according to the natural import of the terms, is falſe; but, if qualified by ſomething concealed in the mind, becomes true.

Mental reſervations are the great refuge of religious hypocrites, who uſe them to accommodate their conſciences with their intereſts: the Jeſuits are zealous advocates for mental reſervations; yet are they real lies, as including an intention to deceive.

Reserve
Rife

RESERVE, in law, the ſame with reſervation. See RESERVATION.

Body of Reſerve, or Corps de Reſerve, in military affairs, the third or laſt line of an army, drawn up for battle; ſo called becauſe they are reſerved to ſuſtain the reſt as occaſion requires, and not to engage but in caſe of neceſſity.

RESERVOIR, a place where water is collected and reſerved, in order to be conveyed to diſtant places through pipes, or ſupply a fountain or jet d'eau.

RESET, in law, the receiving or harbouring an outlawed perſon. See OUTLAWRY.

Reſet of Theft, in Scots law. See LAW, n° clxxxvi. 29.

RESIDENCE, in the canon or common law, the abode of a perſon or incumbent upon his benefice; and his aſſiduity in attending on the ſame.

RESIDENT, a public miniſter, who manages the affairs of a kingdom or ſtate, at a foreign court.

They are a claſs of public miniſters inferior to ambaſſadors or envoys; but, like them, are under the protection of the law of nations.

RESIDUE, the remainder or balance of an account, debt, or obligation.

RESIGNATION, in general, ſignifies the implicit ſubmiſſion of ourſelves, or of ſomething we poſſeſs, to the will of another. In a religious ſenſe it ſignifies a perfect ſubmiſſion, without diſcontent, to the will of God. See MORAL PHILOSOPHY, n° 119.

RESIN, in natural hiſtory, a viſcid juice oozing either ſpontaneouſly, or by inciſion, from ſeveral trees, as the pine, fir, &c.—A premium for ſeveral years has been offered by the London Society for Encouraging Arts, &c. for diſcovering a mode of reducing the inflammable quality of reſin, ſo as to adapt it to the purpoſes of making candles; but no ſuch diſcovery has yet been made.

Elaſtic Reſin. See CAOUTCHOUC.

Gum Reſin, a mixture of gum and reſin. See PHARMACY, n° 38.

Red Gum Reſin, is procured from the red gum tree, or eucalyptus reſinifera; a tree ſo large and lofty as to exceed in ſize the Engliſh oak. The wood of the tree is brittle, and of little uſe but for fire-wood, from the large quantity of reſinous gum it contains. The tree is diſtinguiſhed by having pedunculated flowers, and an acute or pointed conical calyptra. To obtain the juice from this tree inciſions are made in the trunk of it, and ſometimes upwards of 60 gallons of red reſinous juice have been obtained from one of them. "When this juice is dried, it becomes a very powerful aſtringent gum-reſin, of a red colour, much reſembling that known in the ſhops by the name of *kino*, and, for all medical purpoſes, fully as efficacious. Mr White adminiſtered it to a great number of patients in the dyſentery, which prevailed much, ſoon after the landing of the convicts, and in no one inſtance found it to fail. This gum-reſin diſſolves almoſt entirely in ſpirit of wine, to which it gives a blood-red tincture. Water diſſolves about one ſixth part only, and the watery ſolution is of a bright red. Both theſe ſolutions are powerfully aſtringent.

White's Voyage, Appendix.

Yellow Gum Reſin, is procured from the yellow reſin tree, which is as large as the Engliſh walnut tree. The properties of this reſin are equal to thoſe of the moſt fragrant balſams. It exudes from the bark ſpontaneouſly, but more readily if inciſions are made. The colour of it is yellow, and at firſt it is fluid; but after being inſpiſſated in the ſun, it becomes ſolid. When burnt on hot coals, it ſmells like a mixture of balſam of Tolu and benzoin, approaching ſomewhat to ſtorax. "It is perfectly ſoluble in ſpirit of wine, but not in water, nor even in eſſential oil of turpentine, unleſs it be digeſted in a ſtrong heat. The varniſh which it makes with either is very weak, and of little uſe. With reſpect to its medicinal qualities, Mr White has found it, in many caſes, a good pectoral medicine, and very balſamic. It is not obtainable in ſo great abundance as the red gum produced by the eucalyptus reſinifera. The plant which produces the yellow gum ſeems to be perfectly unknown to botaniſts, but Mr White has communicated no ſpecimens by which its genus or even claſs could be determined." Ibid.

Reſinous, Reſiſtance.

RESINOUS ELECTRICITY, is that kind of electricity which is produced by exciting bodies of the reſinous kind, and which is generally negative. See ELECTRICITY *paſſim*.

RESISTANCE, or *RESISTING Force*, in philoſophy, denotes, in general, any power which acts in an oppoſite direction to another, ſo as to deſtroy or diminiſh its effect. See MECHANICS, HYDROSTATICS, and PNEUMATICS.

1 Importance of the ſubject.

Of all the reſiſtances of bodies to each, there is undoubtedly none of greater importance than the reſiſtance or reaction of fluids. It is here that we muſt look for a theory of naval architecture, for the impulſe of the air is our moving power, and this muſt be modified ſo as to produce every motion we want by the form and diſpoſition of our ſails; and it is the reſiſtance of the water which muſt be overcome, that the ſhip may proceed in her courſe; and this muſt alſo be modified to our purpoſe, that the ſhip may not drive like a log to leeward, but on the contrary may ply to windward, that ſhe may anſwer her helm briſkly, and that ſhe may be eaſy in all her motions on the ſurface of the troubled ocean. The impulſe of wind and water makes them ready and indefatigable ſervants in a thouſand ſhapes for driving our machines; and we ſhould loſe much of their ſervice did we remain ignorant of the laws of their action: they would ſometimes become terrible maſters, if we did not fall upon methods of eluding or ſoftening their attacks.

2 The ancients were tolerably well acquainted with it.

We cannot refuſe the ancients a conſiderable knowledge of this ſubject. It was equally intereſting to them as to us; and we cannot read the accounts of the naval exertions of Phœnicia, Carthage, and of Rome, exertions which have not been ſurpaſſed by any thing of modern date, without believing that they poſſeſſed much practical and experimental knowledge of this ſubject. It was not, perhaps, poſſeſſed by them in a ſtrict and ſyſtematic form, as it is now taught by our mathematicians; but the maſter-builders, in their dockyards, did undoubtedly exerciſe their genius in comparing the forms of their fineſt ſhips, and in marking thoſe circumſtances of form and dimenſion which were *in fact* accompanied with the deſirable properties of a ſhip, and thus framing to themſelves maxims of naval architecture in the ſame manner as we do now. For we believe

Reſiſtance. believe that our naval architects are not diſpoſed to grant that they have profited much by all the labours of the mathematicians. But the ancients had not made any great progreſs in the phyſicomathematical ſciences, which conſiſt chiefly in the application of calculus to the phenomena of nature. In this branch they could make none, becauſe they had not the means of inveſtigation. A knowledge of the motions and actions of fluids is acceſſible only to thoſe who are familiarly acquainted with the fluxionary mathematics; and without this key there is no admittance. Even when poſſeſſed of this guide, our progreſs has been very ſlow, heſitating, and devious; and we have not yet been able to eſtabliſh any ſet of doctrines which are ſuſceptible of an eaſy and confident application to the arts of life. If we have advanced farther than the ancients, it is becauſe we have come after them, and have profited by their labours, and even by their miſtakes.

3 But even now it is not perfectly underſtood.

4 Sir I. Newton firſt applied mathematics to it.

Sir Iſaac Newton was the firſt (as far as we can recollect) who attempted to make the motions and actions of fluids the ſubject of mathematical diſcuſſion. He had invented the method of fluxions long before he engaged in his phyſical reſearches; and he proceeded in theſe *ſuâ matheſi facem præferente*. Yet even with this guide he was often obliged to grope his way, and to try various bye-paths, in the hopes of obtaining a legitimate theory. Having exerted all his powers in eſtabliſhing a theory of the lunar motions, he was obliged to reſt contented with an approximation inſtead of a perfect ſolution of the problem which aſcertains the motions of three bodies mutually acting on each other. This convinced him that it was in vain to expect an accurate inveſtigation of the motions and actions of fluids, where millions of unſeen particles combine their influence. He therefore caſt about to find ſome particular caſe of the problem which would admit of an accurate determination, and at the ſame time furniſh circumſtances of analogy or reſemblance ſufficiently numerous for giving limiting caſes, which ſhould include between them thoſe other caſes that did not admit of this accurate inveſtigation. And thus, by knowing the limit to which the caſe propoſed did approximate, and the circumſtances which regulated the approximation, many uſeful propoſitions might be deduced for directing us in the application of theſe doctrines to the arts of life.

5 Difficulties he met with in it.

6 He propoſed a theory,

He therefore figured to himſelf a hypothetical collection of matter which poſſeſſed the characteriſtic property of fluidity, viz. the *quâquâverſum* propagation of preſſure, and the moſt perfect intermobility (pardon the uncouth term) of parts, and which formed a phyſical whole or aggregate, whoſe parts were connected by mechanical forces, determined both in degree and in direction, and ſuch as rendered the determination of certain important circumſtances of their motion ſuſceptible of preciſe inveſtigation. And he concluded, that the laws which he ſhould diſcover in theſe motions muſt have a great analogy with the laws of the motions of real fluids: And from this hypotheſis he deduced a ſeries of propoſitions, which form the baſis of almoſt all the theories of the impulſe and reſiſtance of fluids which have been offered to the public ſince his time.

7 Which does not, however, agree with experiment.

It muſt be acknowledged, that the reſults of this theory agree but ill with experiment, and that, *in the way in which it has been zealouſly proſecuted by ſubſequent mathematicians*, it proceeds on principles or aſſumptions which are not only gratuitous, but even falſe. But it affords ſuch a beautiful application of geometry and calculus, that mathematicians have been as it were faſcinated by it, and have publiſhed ſyſtems ſo elegant and ſo extenſively applicable, that one cannot help lamenting that the foundation is ſo flimſy. John Bernoulli's theory, in his diſſertation on the communication of motion, and Bouguer's in his *Traité du Navire*, and in his *Theorie du Manœuvre et de la Mâture des Vaiſſeaux*, muſt ever be conſidered as among the fineſt ſpecimens of phyſicomathematical ſcience which the world has ſeen. And, with all its imperfections, this theory ſtill furniſhes (as was expected by its illuſtrious author) many propoſitions of immenſe practical uſe, they being the limits to which the real phenomena of the impulſe and reſiſtance of fluids really approximate. So that when the law by which the phenomena deviate from the theory is once determined by a well choſen ſeries of experiments, this hypothetical theory becomes almoſt as valuable as a true one. And we may add, that although Mr d'Alembert, by treading warily in the ſteps of Sir Iſaac Newton in another route, has diſcovered a genuine and unexceptionable theory, the proceſs of inveſtigation is ſo intricate, requiring every fineſſe of the moſt abſtruſe analyſis, and the final equations are ſo complicated, that even their moſt expert author has not been able to deduce more than one ſimple propoſition (which too was diſcovered by Daniel Bernoulli by a more ſimple proceſs) which can be applied to any uſe. The hypothetical theory of Newton, therefore, continues to be the groundwork of all our practical knowledge of the ſubject.

8 But its utility is ſtill very conſiderable.

We ſhall therefore lay before our readers a very ſhort view of the theory, and the manner of applying it. We ſhall then ſhow its defects (all of which were pointed out by its great author), and give an hiſtorical account of the many attempts which have been made to amend it or to ſubſtitute another: in all which we think it our duty to ſhow, that Sir Iſaac Newton took the lead, and pointed out every path which others have taken, if we except Daniel Bernoulli and d'Alembert; and we ſhall give an account of the chief ſets of experiments which have been made on this important ſubject, in the hopes of eſtabliſhing an empirical theory, which may be employed with confidence in the arts of life.

9 The term reſiſtance, as here applied, explained.

We know by experience that force muſt be applied to a body in order that it may move through a fluid, ſuch as air or water; and that a body projected with any velocity is gradually retarded in its motion, and generally brought to reſt. The analogy of nature makes us imagine that there is a force acting in the oppoſite direction, or oppoſing the motion, and that this force reſides in, or is exerted by, the fluid. And the phenomena reſemble thoſe which accompany the known reſiſtance of active beings, ſuch as animals. Therefore we give to this ſuppoſed force the metaphorical name of RESISTANCE. We alſo know that a fluid in motion will hurry a ſolid body along with the ſtream, and that it requires force to maintain it in its place. A ſimilar analogy makes us ſuppoſe that the fluid exerts force, in the ſame manner as when an active being impels the body before him; therefore we call this the *IMPULSION of a Fluid*. And as our knowledge of nature informs us that the mutual actions of bodies are in

every

[illegible] and equal and opposite, and that the observed [illegible] of motion [illegible] characteristic, [illegible] of the [illegible] force, the forces are the [illegible] (or resistances) [illegible] the same, and therefore [illegible] relative motions. The force, [illegible] for keeping a body immoveable [illegible] water, flowing with a certain velocity, [illegible] with what is required for moving [illegible] velocity through stagnant water. To any one who admits the motion of the earth round [illegible] that we can neither observe nor [illegible] a body moving through still water, nor of a stream of water pressing upon or impelling a quiescent body.

A body in motion appears to be resisted by a stagnant fluid, because it is a law of mechanical nature that force must be employed in order to put any body in motion. Now the body cannot move forward without putting the contiguous fluid in motion, and force must be employed for producing this motion. In like manner, a quiescent body is impelled by a stream of fluid, because the motion of the contiguous fluid is diminished by this solid obstacle; the resistance, therefore, or impulse, no way differs from the ordinary communications of motion among solid bodies.

Sir Isaac Newton, therefore, begins his theory of the resistance and impulse of fluids, by selecting a case where, although he cannot pretend to ascertain the motions themselves which are produced in the particles of a contiguous fluid, he can tell precisely their mutual ratios.

10 Sir Isaac Newton supposes two systems similar in their parts, and each part having a constant ratio to each.

He supposes two systems of bodies such, that each body of the first is similar to a corrsponding body of the second, and that each is to each in a constant ratio. He also supposes them to be similarly situated, that is, at the angles of similar figures, and that the homologous lines of these figures are in the same ratio with the diameters of the bodies. He farther supposes, that they attract or repel each other in similar directions, and that the accelerating connecting forces are also proportional; that is, the forces in the one system are to the corresponding forces in the other system in a constant ratio, and that, in each system taken apart, the forces are as the squares of the velocities directly, and as the diameters of the corresponding bodies, or their distances, inversely.

11 Effect of the similar parts being put in motion.

This being the case, it legitimately follows, that if similar parts of the two systems are put into similar motions, in any given instant, they will *continue* to move similarly, each correspondent body describing similar curves, with proportional velocities: For the bodies being similarly situated, the forces which act on a body in one system, arising from the combination of any number of adjoining particles, will have the same direction with the force acting on the corresponding body in the other system, arising from the combined action of the similar and similarly directed forces of the joining correspondent bodies of the other system; and these compound forces will have the same ratio with the simple forces which constitute them, and will be as the squares of the velocities directly, and as the distances, or any homologous lines inversely; and therefore the chords of curvature, having the direction of the centripetal or centrifugal forces, and similarly inclined to the tangents of the curves described by the corresponding bodies, will have the same ratio with the distances of the particles. The curves described by the corresponding bodies will therefore be similar, the velocities will be proportional, and the bodies will be similarly situated at the end of the first moment, and exposed to the action of similar and similarly situated centripetal or centrifugal forces; and this will again produce similar motions during the next moment, and so on for ever. All this is evident to any person acquainted with the elementary doctrines of curvilineal motions, as delivered in the theory of physical astronomy.

12 Consequence deduced from it.

From this fundamental proposition, it clearly follows, that if two similar bodies, having their homologous lines proportional to those of the two systems, be similarly projected among the bodies of those two systems with any velocities, they will produce similar motions in the two systems, and will themselves continue to move similarly; and therefore will, in every subsequent moment, suffer similar diminutions or retardations. If the initial velocities of projection be the same, but the densities of the two systems, that is, the quantities of matter contained in an equal bulk or extent, be different, it is evident that the quantities of motion produced in the two systems in the same time will be proportional to the densities; and if the densities are the same, and uniform in each system, the quantities of motion produced will be as the squares of the velocities, because the motion communicated to each corresponding body will be proportional to the velocity communicated, that is, to the velocity of the impelling body; and the number of similarly situated particles which will be agitated will also be proportional to this velocity. Therefore, the whole quantities of motion produced in the same moment of time will be proportional to the squares of the velocities. And lastly, if the densities of the two systems are uniform, or the same through the whole extent of the systems, the number of particles impelled by similar bodies will be as the surfaces of these bodies.

Now the diminutions of the motions of the projected bodies are (by Newton's third law of motion) equal to the motions produced in the systems; and these diminutions are the measures of what are called the resistances opposed to the motions of the projected bodies. Therefore, combining all these circumstances, the resistances are proportional to the similar surfaces of the moving bodies, to the densities of the systems through which the motions are performed, and to the squares of the velocities, jointly.

13 A fluid considered as a system of small bodies similarly arranged.

We cannot form to ourselves any distinct notion of a fluid, otherwise than as a system of small bodies, or a collection of particles, similarly or symmetrically arranged, the centres of each being situated in the angles of regular solids. We must form this notion of it, whether we suppose, with the vulgar, that the particles are little globules in mutual contact, or, with the partisans of corpuscular attractions and repulsions, we suppose the particles kept at a distance from each other by means of these attractions and repulsions mutually balancing each other. In this last case, no other arrangement is consistent with a quiescent equilibrium: and in this case, it is evident, from the theory of curvilineal motions, that the agitations of the particles will always be such, that the connecting forces, in actual exertion, will

Reſiſtance. will be proportional to the ſquares of the velocities directly, and to the chords of curvature having the direction of the forces inverſely.

From theſe premiſes, therefore, we deduce, in the ſtricteſt manner, the demonſtration of the leading theorem of the reſiſtance and impulſe of fluids; namely,

14 First law of the reſiſtance, &c. of fluids.

PROP. I. The reſiſtances, and (by the third law of motion), the impulſions of fluids on ſimilar bodies, are proportional to the ſurfaces of the ſolid bodies, to the denſities of the fluids, and to the ſquares of the velocities, jointly.

We muſt now obſerve, that when we ſuppoſe the particles of the fluid to be in mutual contact, we may either ſuppoſe them elaſtic or unelaſtic. The motion communicated to the collection of elaſtic particles muſt be double of what the ſame body, moving in the ſame manner, would communicate to the particles of an unelaſtic fluid. The impulſe and reſiſtance of elaſtic fluids muſt therefore be double of thoſe of unelaſtic fluids.—But we muſt caution our readers not to judge of the elaſticity of fluids by their ſenſible compreſſibility. A diamond is incomparably more elaſtic than the fineſt foot-ball, though not compreſſible in any ſenſible degree.—It remains to be decided, by well choſen experiments, whether water be not as elaſtic as air. If we ſuppoſe, with Boſcovich, the particles of perfect fluids to be at a diſtance from each other, we ſhall find it difficult to conceive a fluid void of elaſticity. We hope that the theory of their impulſe and reſiſtance will ſuggeſt experiments which will decide this queſtion, by pointing out what ought to be the abſolute impulſe or reſiſtance in either caſe. And thus the fundamental propoſition of the impulſe and reſiſtance of fluids, taken in its proper meaning, is ſuſceptible of a rigid demonſtration, relative to the only diſtinct notion that we can form of the internal conſtitution of a fluid. We ſay, *taken in its proper meaning*; namely, that the impulſe or reſiſtance of fluids is a preſſure, oppoſed and meaſured by another preſſure, ſuch as a pound weight, the force of a ſpring, the preſſure of the atmoſphere, and the like. And we apprehend that it would be very difficult to find any legitimate demonſtration of this leading propoſition different from this, which we have now borrowed from Sir Iſaac Newton, Prop. 23. B. II. *Princip.* We acknowledge that it is prolix and even circuitous: but in all the attempts made by his commentators and their copyiſts to ſimplify it, we ſee great defects of logical argument, or aſſumption of principles, which are not only gratuitous, but inadmiſſible. We ſhall have occaſion, as we proceed, to point out ſome of theſe defects; and doubt not but the illuſtrious author of this demonſtration had exerciſed his uncommon patience and ſagacity in ſimilar attempts, and was diſſatisfied with them all.

15 Elaſticity of water.

Before we proceed further, it will be proper to make a general remark, which will have a great deal of diſcuſſion. Since it is a matter of univerſal experience, that every action of a body on others is accompanied by an equal and contrary re-action; and ſince all that we can demonſtrate concerning the reſiſtance of bodies during their motions through fluids proceeds on this ſuppoſition, (the reſiſtance of the body being *aſſumed* as equal and oppoſite to the ſum of motions communicated to the particles of the fluid, eſtimated in the direction of the body's motion), we are intitled to proceed in the contrary order, and to conſider the impulſions which each of the particles of fluid exerts on the body at reſt, as equal and oppoſite to the motion which the body would communicate to that particle if the fluid were at reſt, and the body were moving equally ſwift in the oppoſite direction. And therefore the whole impulſion of the fluid muſt be conceived as the meaſure of the whole motion which the body would thus communicate to the fluid. It muſt therefore be alſo conſidered as the meaſure of the reſiſtance which the body, moving with the ſame velocity, would ſuſtain from the fluid. When, therefore, we ſhall demonſtrate any thing concerning the impulſion of a fluid, eſtimated in the direction of its motion, we muſt conſider it as demonſtrated concerning the reſiſtance of a quieſcent fluid to the motion of that body, having the ſame velocity in the oppoſite direction. The determination of theſe impulſions being much eaſier than the determination of the motions communicated by the body to the particles of the fluid, this method will be followed in moſt of the ſubſequent diſcuſſions. Reſiſtance.

The general propoſition already delivered is by no means ſufficient for explaining the various important phenomena obſerved in the mutual actions of ſolids and fluids. In particular, it gives us no aſſiſtance in aſcertaining the modifications of this reſiſtance or impulſe, which depend on the ſhape of the body, and the inclination of its impelled or reſiſted ſurface to the direction of the motion. Sir Iſaac Newton found another hypotheſis neceſſary; namely, that the fluid ſhould be ſo extremely rare that the diſtance of the particles may be incomparably greater than their diameters. This additional condition is neceſſary for conſidering their actions as ſo many ſeparate colliſions or impulſions on the ſolid body. Each particle muſt be ſuppoſed to have abundant room to rebound, or otherwiſe eſcape, after having made its ſtroke, without ſenſibly affecting the ſituations and motions of the particles which have not yet made their ſtroke: and the motion muſt be ſo ſwift as not to give time for the ſenſible exertion of their mutual forces of attractions and repulſions.

Keeping theſe conditions in mind, we may proceed to determine the impulſions made by a fluid on ſurfaces of every kind: And the moſt convenient method to purſue in this determination, is to compare them all either with the impulſe which the *ſame ſurface* would receive from the fluid impinging on it perpendicularly, or with the impulſe which the *ſame ſtream of fluid* would make when coming perpendicularly on a ſurface of ſuch extent as to occupy the whole ſtream.

16 Terms explained.

It will greatly abbreviate language, if we make uſe of a few terms in an appropriated ſenſe.

By a *ſtream*, we ſhall mean a quantity of fluid moving in one direction, that is, each particle moving in parallel lines; and the *breadth* of the ſtream is a line perpendicular to all theſe parallels.

A *filament* means a portion of this ſtream of very ſmall breadth, and it conſiſts of an indefinite number of particles following one another in the ſame direction, and ſucceſſively impinging on, or gliding along, the ſurface of the ſolid body.

The *baſe* of any ſurface expoſed to a ſtream of fluid, is that portion of a plane perpendicular to the ſtream, which is covered or protected from the action of the ſtream by the ſurface expoſed to its impulſe. Thus the baſe of a ſphere expoſed to a ſtream of fluid is its great circle,

R ſiſtance. ...ds, whoſe plane is perpendicular to the ſtream. If BC (fig. 1.) be a plane ſurface expoſed to the action of a ſtream of fluid, moving in the direction DC, then BR, or SE, perpendicular to DC, is its baſe.

Direct impulſe is that which expreſs the energy or action of the particle or filament, or ſtream of fluid, when meeting the ſurface perpendicularly, or when the ſurface is perpendicular to the direction of the ſtream.

Abſolute oblique impulſe means the actual preſſure on the impelled ſurface, ariſing from the action of the fluid, whether ſtriking the ſurface perpendicularly or obliquely; or it is the force in preſſed on the ſurface, or tendency to motion which it acquires, and which muſt be oppoſed by an equal force in the oppoſite direction, in order that the ſurface may be maintained in its place. It is of importance to keep in mind, that this preſſure is always perpendicular to the ſurface. It is a propoſition founded on univerſal and uncontradicted experience, that the mutual actions of bodies on each other are always exerted in a direction perpendicular to the touching ſurfaces. Thus, it is obſerved, that when a billiard ball A is ſtruck by another B, moving in any direction whatever, the ball A always moves off in the direction perpendicular to the plane which touches the two balls in the point of mutual contact, or point of impulſe. This inductive propoſition is ſupported by every argument which can be drawn from what we know concerning the forces which connect the particles of matter together, and are the immediate cauſes of the communication of motion. It would employ much time and room to ſtate them here; and we apprehend that it is unneceſſary: for no reaſon can be aſſigned why the preſſure ſhould be in *any particular* oblique direction. If any one ſhould ſay that the impulſe will be in the direction of the ſtream, we have only to deſire him to take notice of the effect of the rudder of a ſhip. This ſhows that the impulſe *is not in the direction of the ſtream*, and is therefore in ſome direction tranſverſe to the ſtream.—He will alſo find, that when a plane ſurface is impelled obliquely by a fluid, there is no direction in which it can be ſupported but the direction perpendicular to itſelf. It is quite ſafe, in the mean time, to take it as an experimental truth. We may, perhaps, in ſome other part of this work, give what will be received as a rigorous demonſtration.

Relative or effective impulſe means the preſſure on the ſurface eſtimated in ſome particular direction. Thus BC (fig. 1.) may repreſent the ſail of a ſhip, impelled by the wind blowing in the direction DC. GO may be the direction of the ſhip's keel, or the line of her courſe. The wind ſtrikes the ſail in the direction GH parallel to DC; the ſail is urged or preſſed in the direction GI, perpendicular to BC. But we are intereſted to know what tendency this will give the ſhip to move in the direction GO. This is the effective or relative impulſe. Or BC may be the tranſverſe ſection of the ſail of a common wind-mill. This, by the conſtruction of the machine, can move only in the direction GP, perpendicular to the direction of the wind; and it is only in this direction that the impulſe produces the deſired effect. Or BC may be half of the prow of a punt or lighter, riding at anchor by means of the cable DC, attached to the prow C. In this caſe, GQ, parallel to DC, is that part of the abſolute impulſe which is employed in ſtraining the cable.

The *angle of incidence* is the angle FGC contained between the direction of the ſtream FG and the plane BC. R ſiſtance.

The *angle of obliquity* is the angle OGC contained between the plane and the direction GO, in which we wiſh to eſtimate the impulſe.

17

PROP. II. The direct impulſe of a fluid on a plane ſurface, is to its abſolute oblique impulſe on the ſame ſurface, as the ſquare of the radius to the ſquare of the ſine of the angle of incidence. Second law of reſiſtance.

Let a ſtream of fluid, moving in the direction DC, (fig. 1.), act on the plane BC. With the radius CB deſcribe the quadrant ABE; draw CA perpendicular to CE, and draw MNBS parallel to CE. Let the particle F, moving in the direction FG, meet the plane in G, and in FG produced take GH to repreſent the magnitude of the direct impulſe, or the impulſe which the particle would exert on the plane AC, by meeting it in V. Draw GI and HK perpendicular to BC, and HI perpendicular to GI. Alſo draw BR perpendicular to DC.

The force GH is equivalent to the two forces GI and GK; and GK being in the direction of the plane has no ſhare in the impulſe. The abſolute impulſe, therefore, is repreſented by GI; the angle GHI is equal to FGC, the angle of incidence; and therefore GH is to GI as radius to the ſine of the angle of incidence: Therefore the direct impulſe of each particle or filament is to its abſolute oblique impulſe as radius to the ſine of the angle of incidence. But further, the number of particles or filaments which ſtrike the ſurface AC, is to the number of thoſe which ſtrike the ſurface BC as AC to NC: for all the filaments between LA and MB go paſt the oblique ſurface BC without ſtriking it. But BC : NC = rad. : ſin. NBC, = rad. : ſin. FGC, = rad. : ſin. incidence. Now the whole impulſe is as the impulſe of each filament, and as the number of filaments exerting equal impulſes jointly; therefore the whole direct impulſe on AC is to the whole abſolute impulſe on BC, as the ſquare of radius to the ſquare of the ſine of the angle of incidence.

Let S expreſs the extent of the ſurface, i the angle of incidence, o the angle of obliquity, v the velocity of the fluid, and d its denſity. Let F repreſent the direct impulſe, f the abſolute oblique impulſe, and ϕ the relative or effective impulſe: and let the tabular ſines and coſines be conſidered as decimal fractions of the radius unity.

This propoſition gives us $F : f = R^2 : \text{Sin.}^2 i, = 1 : \text{Sin.}^2 i$, and therefore $f = F \times \text{Sin.}^2 i$. Alſo, becauſe impulſes are in the proportion of the extent of ſurface ſimilarly impelled, we have, in general, $f = F S \times \text{Sin.}^2 i$.

The firſt who publiſhed this theorem was Pardies, in his *Oeuvres de Mathematique*, in 1673. We know that Newton had inveſtigated the chief propoſitions of the Principia before 1670.

18

PROP. III. The direct impulſe on any ſurface is to the effective oblique impulſe on the ſame ſurface, as the cube of radius to the ſolid, which has for its baſe the ſquare of the ſine of incidence, and the ſine of obliquity for its height. Third law.

For,

Resistance.

For, when GH represents the direct impulse of a particle, GI is the absolute oblique impulse, and GO is the effective impulse in the direction GO: Now GI is to GO as radius to the sine of GIO, and GIO is the complement of IGO, and is therefore equal to CGO, the angle of obliquity.

Therefore $f : \varphi = R : \text{Sin. } O$.
But $F : f = R^2 : \text{Sin.}^2 i$
Therefore $F : \varphi = R^3 : \text{Sin.}^2 i \times \text{Sin. } O$. and

19 Proportion of the direct impulse to the effective oblique impulse.

$\varphi = F \times \text{Sin.}^2 i \times \text{Sin. } O$.

Cor.—The direct impulse on any surface is to the effective oblique impulse in the direction of the stream, as the cube of radius to the cube of the sine of incidence. For draw I Q and G P perpendicular to GH, and IP perpendicular to GP; then the absolute impulse GI is equivalent to the impulse GQ in the direction of the stream, and GP, which may be called the transverse impulse. The angle G I Q is evidently equal to the angle GH1, or FGC, the angle of incidence.

Therefore $f : \varphi = GI : GQ, = R : \text{Sin. } i$.
But $F : f = R^2 : \text{Sin.}^2 i$.
Therefore $F : \varphi = R^3 : \text{Sin.}^3 i$.
And $\varphi = F \times \text{Sin.}^3 i$.

20 Impulse on a surface in motion.

Before we proceed further, we shall consider the impulse on a surface which is also in motion. This is evidently a frequent and an important case. It is perhaps the most frequent and important: It is the case of a ship under sail, and of a wind or water-mill at work.

Plate ccccxxxvi.

Therefore, let a stream of fluid, moving with the direction and velocity DE, meet a plane BC, (fig. 1. n° 2.), which is moving parallel to itself in the direction and with the velocity DF: It is required to determine the impulse?

Nothing is more easy: The mutual actions of bodies depend on their relative motions only. The motion DE of the fluid relative to BC, which is also in motion, is compounded of the real motion of the fluid and the opposite to the real motion of the body. Therefore produce FD till D f = DF, and complete the parallelogram D f e E, and draw the diagonal D e. The impulse on the plane is the same as if the plane were at rest, and every particle of the fluid impelled it in the direction and with the velocity D e; and may therefore be determined by the foregoing proposition. This proposition applies to every possible case; and we shall not bestow more time on it, but reserve the important modification of the general proposition for the cases which shall occur in the practical applications of the whole doctrine of the impulse and resistance of fluids.

21 Proportion of the direct impulse of a given stream to the effective oblique impulse in the same direction.

Prop. IV. The direct impulse of a stream of fluid, whose breadth is given, is to its oblique effective impulse in the direction of the stream, as the square of radius to the square of the sine of the angle of incidence.

For the number of filaments which occupy the oblique plane BC, would occupy the portion NC of a perpendicular plane, and therefore we have only to compare the perpendicular impulse on any point V with the effective impulse made by the same filament FV on the oblique plane at G. Now GH represents the impulse which this filament would make at V; and GQ is the effective impulse of the same filament at G, estimated in the direction G H of the stream; and GH is to GQ as GH^2 to GI^2, that is, as rad.^{2} to sin.$^2 i$.

Cor. 1. The effective impulse in the direction of the stream on any plane surface BC, is to the direct impulse on its base BR or SE, as the square of the sine of the angle of incidence to the square of the radius. Resistance.

2. If an isosceles wedge ACB (fig. 2.) be exposed to a stream of fluid moving in the direction of its height CD, the impulse on the sides is to the direct impulse on the base as the square of half the base AD to the square of the side AC, or as the square of the sine of half the angle of the wedge to the square of the radius. For it is evident, that in this case the two transverse impulses, such as GP in fig. 1, balance each other, and the only impulse which can be observed is the sum of the two impulses, such as GQ of fig. 1, which are to be compared with the impulses on the two halves AD, DB of the base. Now AC : AB = rad. : sin. ACD, and ACD is equal to the angle of incidence.

Therefore, if the angle ACB is a right angle, and ACD is half a right angle, the square of AC is twice the square of AD, and the impulse on the sides of a rectangular wedge is half the impulse on its base.

Also, if a cube ACBE (fig. 3.) be exposed to a stream moving in a direction perpendicular to one of its sides, and then to a stream moving in a direction perpendicular to one of its diagonal planes, the impulse in the first case will be to the impulse in the second as $\sqrt{2}$ to 1. Call the perpendicular impulse on a side F, and the perpendicular impulse on its diagonal plane f, and the effective oblique impulse on its sides φ;—we have

$F : f = AC : AB = 1 : \sqrt{2}$, and
$f : \varphi = AC^2 : AD^2 = 2 : 1$. Therefore
$F : \varphi = 2 : \sqrt{2}, = \sqrt{2} : 1$, or

very nearly as 10 to 7.

The same reasoning will apply to a pyramid whose base is a regular polygon, and whose axis is perpendicular to the base. If such a pyramid is exposed to a stream of fluid moving in the direction of the axis, the direct impulse on the base is to the effective impulse on the pyramid, as the square of the radius to the square of the sine of the angle which the axis makes with the sides of the pyramid.

And, in like manner, the direct impulsion on the base of a right cone is to the effective impulsion on the conical surface, as the square of the radius to the square of the sine of half the angle at the vertex of the cone. This is demonstrated, by supposing the cone to be a pyramid of a number of sides.

We may in this manner compare the impulse on any polygonal surface with the impulse on its base, by comparing apart the impulses on each plane with those in their corresponding bases, and taking their sum.

And we may compare the impulse on a curved surface with that on its base, by resolving the curved surface into elementary planes, each of which is impelled by an elementary filament of the stream.

The following beautiful proposition, given by Le Seur and Jaquier, in their Commentary on the second Book of Newton's Principia, with a few examples of its application, will suffice for any further account of this theory.

22 The impulse on a curved surface compared with that on its base.

Prop. V.—Let ADB (fig. 4.) be the section of a surface of simple curvature, such as is the surface of a cylinder. Let this be exposed to the action of a fluid moving in the direction AC. Let BC be the section

Reſiſtance. section of the plane (which we have called its baſe), perpendicular to the direction of the ſtream. In AC produced, take any length CG; and on CG deſcribe the ſemicircle CHG, and complete the rectangle BCGO. Through any point D of the curve draw ED parallel to AC, and meeting BC and OG in Q and P. Let DF touch the curve in D, and draw the chord GH parallel to DF, and HKM perpendicular to CG, meeting ED in M. Suppoſe this to be done for every point of the curve ADB, and let LMN be the curve which paſſes through all the points of interſection of the parallels EDP and the correſponding perpendiculars HKM. Reſiſtance.

The effective impulſe on the curve ſurface ADB in the direction of the ſtream, is to its direct impulſe on the baſe BC as the area of BCNL is to the rectangle BCGO.

Draw *e q w p* parallel to EP and extremely near it. The arch D *d* of the curve may be conceived as the ſection of an elementary plane, having the poſition of the tangent DF. The angle EDF is the angle of incidence of the filament ED *d e*. This is equal to CGH, becauſe ED, DF, are parallel to CG, GH; and (becauſe CHG is a ſemicircle) CH is perpendicular to GH. Alſo CG : CH = CH : CK, and CG : CK = $CG^2 : CH^2$, = rad.^{2} : ſin.^{2}, CGH, = rad.^{2} : ſin.^{2} incid. Therefore if CG, or its equal DP, repreſent the direct impulſe on the point Q of the baſe, CK, or its equal QM, will repreſent the effective impulſe on the point D of the curve. And thus, Q *q p* P will repreſent the direct impulſe of the filament on the element Q *q* of the baſe, and Q *q m* M will repreſent the effective impulſe of the ſame filament on the element D *d* of the curve. And, as this is true of the whole curve ADB, the effective impulſe on the whole curve will be repreſented by the area BCNML; and the direct impulſe on the baſe will be repreſented by the rectangle BCGO; and therefore the impulſe on the curve-ſurface is to the impulſe on the baſe as the area BLMNC is to the rectangle BOGC.

It is plain, from the conſtruction, that if the tangent to the curve at A is perpendicular to AC, the point N and coincide with G. Alſo, if the tangent to the curve at B is parallel to AC, the point L will coincide with B.

Whenever, therefore, the curve ADB is ſuch that an equation can be had to exhibit the general relation between the abſciſſa AR and the ordinate DR, we ſhall deduce an equation which exhibits the relation between the abſciſſa CK and the ordinate KM of the curve LMN; and this will give us the ratio of BLNC to BOGC.

Thus, if the ſurface is that of a cylinder, ſo that the curve BDA *b* (fig. 5.), which receives the impulſe of the fluid, is a ſemicircle, make CG equal to AC, and conſtruct the figure as before. The curve BMG is a parabola, whoſe axis is CG, whoſe vertex is G, and whoſe parameter is equal to CG. For it is plain, that CG = DC, and GH = CQ, = MK. And CG × GK = $GH^2 = KM^2$. That is, the curve is ſuch, that the ſquare of the ordinate KM is equal to the rectangle of the abſciſſa GK and a conſtant line CG; and it is therefore a parabola whoſe vertex is G. Now, it is well known, that the parabolic area BMGC is two thirds of the parallelogram BCGO. Therefore the impulſe on the quadrant ADB is two thirds of the impulſe on the baſe BC. The ſame may be ſaid of the quadrant A *d b* and its baſe *c b*. Therefore, *The impulſe on a cylinder or half cylinder is two thirds of the direct impulſe on its traverſe plane through the axis;* or it is two thirds of the direct impulſe on one ſide of a parallelopiped of the ſame breadth and height. 23 The impulſe on a cylinder,

Prop. VI.—If the body be a ſolid generated by the revolution of the figure BDAC (fig. 4.) round the axis AC; and if it be expoſed to the action of a ſtream of fluid moving in the direction of the axis AC; then the effective impulſe in the direction of the ſtream is to the direct impulſe on its baſe, as the ſolid generated by the revolution of the figure BLMNC, round the axis CN to the cylinder generated by the revolution of the rectangle BOGC.

This ſcarcely needs a demonſtration. The figure ADBLMNA is a ſection of theſe ſolids by a plane paſſing through the axis; and what has been demonſtrated of this ſection is true of every other, becauſe they are all equal and ſimilar. It is therefore true of the whole ſolids, and (their baſe) the circle generated by the revolution of BC round the axis AC.

Hence we eaſily deduce, that *The impulſe on a ſphere is one half of the direct impulſe on its great circle, or on the baſe of a cylinder of equal diameter.* 24 On a ſphere, and

For in this caſe the curve BMN (fig. 5.) which generates the ſolid expreſſing the impulſe on the ſphere is a parabola, and the ſolid is a parabolic conoid. Now this conoid is to the cylinder generated by the revolution of the rectangle BOGC round the axis CG, as the ſum of all the circles generated by the revolution of ordinates to the parabola ſuch as KM, to the ſum of as many circles generated by the ordinates to the rectangle ſuch as KT; or as the ſum of all the ſquares deſcribed on the ordinates KM to the ſum of as many ſquares deſcribed on the ordinates KT. Draw BG cutting MK in S. The ſquare on MK is to the ſquare on BC or TK as the abſciſſa GK to the abſciſſa GC (by the nature of the parabola), or as SK to BC; becauſe SK and BC are reſpectively equal to GK and GC. Therefore the ſum of all the ſquares on ordinates, ſuch as MK, is to the ſum of as many ſquares on ordinates, ſuch as TK, as the ſum of all the lines SK to the ſum of as many lines TK; that is, as the triangle BGC to the rectangle BOGC; that is, as one to two: and therefore the impulſe on the ſphere is one half of the direct impulſe on its great circle.

From the ſame conſtruction we may very eaſily deduce a very curious and ſeemingly uſeful truth, that of all conical bodies having the circle whoſe diameter is AB (fig. 2.) for its baſe, and FD for its height, the one which ſuſtains the ſmalleſt impulſe or reſiſts with the ſmalleſt reſiſtance is the fruſtum AGHB of a cone ACB ſo conſtructed, that EF being taken equal to ED, EA is equal to EC. This fruſtum, though more capacious than the cone AFB of the ſame height, will be leſs reſiſted. 25 On the fruſtum of a conc.

Alſo, if the ſolid generated by the revolution of BDAC (fig. 4.) have its anterior part covered with a fruſtum of a cone generated by the lines D *a*, *a* A, forming

Reſiſtance. forming the angle at *a* of 135 degrees; this ſolid, though more capacious than the included ſolid, will be leſs reſiſted.

And, from the ſame principles, Sir Iſaac Newton determined the form of the curve ADB which would generate the ſolid which, of all others of the ſame length and baſe, ſhould have the leaſt reſiſtance.

Theſe are curious and important deductions, but are not introduced here, for reaſons which will ſoon appear.

The reader cannot fail to obſerve, that all that we have hitherto delivered on this ſubject, relates to the compariſon of different impulſes or reſiſtances. We have always compared the oblique impulſions with the direct, and by their intervention we compare the oblique impulſions with each other. But it remains to give abſolute meaſures of ſome individual impulſion; to which, as to an unit, we may refer every other. And as it is by their preſſure that they become uſeful or hurtful, and they muſt be oppoſed by other preſſures, it becomes extremely convenient to compare them all with that preſſure with which we are moſt familiarly acquainted, the preſſure of gravity.

26 Different impulſions compared with the preſſure of gravity.

The manner in which the compariſon is made, is this. When a body advances in a fluid with a known velocity, it puts a known quantity of the fluid into motion (as is ſuppoſed) with this velocity; and this is done in a known time. We have only to examine what weight will put this quantity of fluid into the ſame motion, by acting on it during the ſame time. This weight is conceived as equal to the reſiſtance. Thus, let us ſuppoſe that a ſtream of water, moving at the rate of eight feet *per* ſecond, is perpendicularly obſtructed by a ſquare foot of ſolid ſurface held faſt in its place. Conceiving water to act in the manner of the hypothetical fluid now deſcribed, and to be without elaſticity, the whole effect is the gradual annihilation of the motion of eight cubic feet of water moving eight feet in a ſecond. And this is done in a ſecond of time. It is equivalent to the gradually putting eight cubic feet of water into motion with this velocity; and doing this by acting uniformly during a ſecond. What weight is able to produce this effect? The weight of eight feet of water, acting during a ſecond on it, will, as is well known, give it the velocity of thirty-two feet *per* ſecond; that is, four times greater. Therefore, the weight of the fourth part of eight cubic feet, that is, the weight of two cubic feet, acting during a ſecond, will do the ſame thing, or the weight of column of water whoſe baſe is a ſquare foot, and whoſe height is two feet. This will not only produce this effect in the ſame time with the impulſion of the ſolid body, but it will alſo do it by the ſame degrees, as any one will clearly perceive, by attending to the gradual acceleration of the maſs of water urged by $\frac{1}{4}$ of its weight, and comparing this with the gradual production or extinction of motion in the fluid by the progreſs of the reſiſted ſurface.

Now it is well known that 8 cubic feet of water, by falling one foot, which it will do in one-fourth of a ſecond, will acquire the velocity of eight feet per ſecond by its weight; therefore the force which produces the ſame effect in a whole ſecond is one-fourth of this. This force is therefore equal to the weight of a column of water, whoſe baſe is a ſquare foot, and whoſe height is two feet; that is, twice the height neceſſary for acquiring the velocity of the motion by gravity. The concluſion is the ſame whatever be the ſurface that is reſiſted, whatever be the fluid that reſiſts, and whatever be the velocity of the motion. In this inductive and familiar manner we learn, that *the direct impulſe or reſiſtance of an uneloſtic fluid on any plane ſurface, is equal to the weight of a column of the fluid having the ſurface for its baſe, and twice the fall neceſſary for acquiring the velocity of the motion for its height:* and if the fluid is conſidered as elaſtic, the impulſe or reſiſtance is twice as great. See Newt. *Princip.* B. II. prop. 35. and 38. Reſiſtance.

27 Thistheory tried by different experiments.

It now remains to compare this theory with experiment. Many have been made, both by Sir Iſaac Newton and by ſubſequent writers. It is much to be lamented, that in a matter of ſuch importance, both to the philoſopher and to the artiſt, there is ſuch a diſagreement in the reſults with each other. We ſhall mention the experiments which ſeem to have been made with the greateſt judgment and care. Thoſe of Sir Iſaac Newton were chiefly made by the oſcillations of pendulums in water, and by the deſcent of balls both in water and in air. Many have been made by Mariotte (*Traité de Mouvement des Eaux*). Graveſande has publiſhed, in his *Syſtem of Natural Philoſophy*, experiments made on the reſiſtance or impulſions on ſolids in the midſt of a pipe or canal. They are extremely well contrived, but are on ſo ſmall a ſcale that they are of very little uſe. Daniel Bernoulli, and his pupil Profeſſor Krafft, have publiſhed, in the *Comment. Acad. Petropol.* experiments on the impulſe of a ſtream or vein of water from an orifice or tube: Theſe are of great value. The Abbé Boſſut has publiſhed others of the ſame kind in his *Hydrodynamique*. Mr Robins has publiſhed, in his *New principles of Gunnery*, many valuable experiments on the impulſe and reſiſtance of air. The Chev. de Borda, in the *Mem. Acad. Paris*, 1763 and 1767, has given experiments on the reſiſtance of air and alſo of water, which are very intereſting. The moſt complete collection of experiments on the reſiſtance of water are thoſe made at the public expence by a committee of the academy of ſciences, conſiſting of the marquis de Condorcet, Mr d'Alembert, Abbé Boſſut, and others. The Chev. de Buat, in his *Hydraulique*, has publiſhed ſome moſt curious and valuable experiments, where many important circumſtances are taken notice of, which had never been attended to before, and which give a view of the ſubject totally different from what is uſually taken of it. Don George d'Ulloa, in his *Examine Maritimo*, has alſo given ſome important experiments, ſimilar to thoſe adduced by Bougeur in his *Manœuvre des Vaiſſeaux*, but leading to very different concluſions. All theſe ſhould be conſulted by ſuch as would acquire a practical knowledge of this ſubject. We muſt content ourſelves with giving their moſt general and ſteady reſults. Such as,

1. It is very conſonant to experiment that the reſiſtances are proportional to the ſquares of the velocities. When the velocities of water do not exceed a few feet per ſecond, no ſenſible deviation is obſerved. In very ſmall velocities the reſiſtances are ſenſibly greater than in this proportion, and this exceſs is plainly owing to the viſcidity or imperfect fluidity of water. Sir Iſaac

Reſiſtance. Newton has ſhown that the reſiſtance ariſing from this cauſe is conſtant, or the ſame in every velocity; and when he has taken off a certain part of the total reſiſtance, he found the remainder was very exactly proportionable to the ſquare of the velocity. His experiments to this purpoſe were made with balls a very little heavier than water, ſo as to deſcend very ſlowly; and they were made with his uſual care and accuracy, and may be depended on.

28 Cauſes of its diſagreement with them.

In the experiments made with bodies floating on the ſurface of water, there is an addition to the reſiſtance ariſing from the inertia of the water. The water heaps up a little on the anterior ſurface of the floating body, and is depreſſed behind it. Hence ariſes a hydroſtatical preſſure, acting in concert with the true reſiſtance. A ſimilar thing is obſerved in the reſiſtance of air, which is condenſed before the body and rarefied behind it, and thus an additional reſiſtance is produced by the unbalanced elaſticity of the air; and alſo becauſe the air, which is *actually* diſplaced, is denſer than common air. Theſe circumſtances cauſe the reſiſtances to increaſe faſter than the ſquares of the velocities: but, even independent of this, there is an additional reſiſtance ariſing from the tendency to rarefaction behind a very ſwift body; becauſe the preſſure of the ſurrounding fluid can only make the fluid fill the ſpace left with a determined velocity.

We have had occaſion to ſpeak of this circumſtance more particularly under GUNNERY and PNEUMATICS, when conſidering very rapid motions. Mr Robins had remarked that the velocity at which the obſerved reſiſtance of the air began to increaſe ſo prodigiouſly, was that of about 1100 or 1200 feet per ſecond, and that this was the velocity with which air would ruſh into a void. He concluded, that when the velocity was greater than this, the ball was expoſed to the additional reſiſtance ariſing from the unbalanced ſtatical preſſure of the air, and that this conſtant quantity behoved to be added to the reſiſtance ariſing from the air's inertia in all greater velocities. This is very reaſonable: But he imagined that in ſmaller velocities there was no ſuch unbalanced preſſure. But this cannot be the caſe: for although in ſmaller velocities the air will ſtill fill up the ſpace behind the body, it will not fill it up with air of the ſame denſity. This would be to ſuppoſe the motion of the air into the deſerted place to be inſtantaneous. There muſt therefore be a rarefaction behind the body, and a preſſure backward; ariſing from unbalanced elaſticity, independent of the condenſation on the anterior part. The condenſation and rarefaction are cauſed by the ſame thing, *viz.* the limited elaſticity of the air. Were this infinitely great, the ſmalleſt condenſation before the body would be inſtantly diffuſed over the whole air, and ſo would the rarefaction, ſo that no preſſure of unbalanced elaſticity would be obſerved; but the elaſticity is ſuch as to propagate the condenſation with the velocity of ſound only, *i. e.* the velocity of 1142 feet per ſecond. Therefore this additional reſiſtance does not commence preciſely at this velocity, but is ſenſible in all ſmaller velocities, as is very juſtly obſerved by Euler. But we are not yet able to aſcertain the law of its increaſe, although it is a problem which ſeems ſuſceptible of a tolerably accurate ſolution.

Reſiſtance. Preciſely ſimilar to this is the reſiſtance to the motion of floating bodies, ariſing from the accumulation or gorging up of the water on their anterior ſurface, and its depreſſion behind them. Were the gravity of the water infinite, while its inertia remains the ſame, the wave raiſed up at the prow of a ſhip would be inſtantly diffuſed over the whole ocean, and it would therefore be infinitely ſmall, as alſo the depreſſion behind the poop. But this wave requires time for its diffuſion; and while it is not diffuſed, it acts by hydroſtatical preſſure. We are equally unable to aſcertain the law of variation of this part of the reſiſtance, the mechaniſm of waves being but very imperfectly underſtood. The height of the wave in the experiments of the French academy could not be meaſured with ſufficient preciſion (being only obſerved *en paſſant*) for aſcertaining its relation to the velocity. The Chev. Buat attempted it in his experiments, but without ſucceſs. This muſt evidently make a part of the reſiſtance in all velocities: and it ſtill remains an undecided queſtion, "What relation it bears to the velocities?" When the ſolid body is wholly buried in the fluid, this accumulation does not take place, or at leaſt not in the ſame way: It may, however, be obſerved. Every perſon may recollect, that in a very ſwift running ſtream a large ſtone at the bottom will produce a ſmall ſwell above it; unleſs it lies very deep, a nice eye may ſtill obſerve it. The water, on arriving at the obſtacle, glides paſt it in every direction, and is deflected on all hands; and therefore what paſſes over it is alſo deflected upwards, and cauſes the water over it to riſe above its level. The nearer that the body is to the ſurface, the greater will be the perpendicular riſe of the water, but it will be leſs diffuſed; and it is uncertain whether the *whole* elevation will be greater or leſs. By the whole elevation we mean the area of a perpendicular ſection of the elevation by a plane perpendicular to the direction of the ſtream. We are rather diſpoſed to think that this area will be greateſt when the body is near the ſurface. D'Ulloa has attempted to conſider this ſubject ſcientifically; and is of a very different opinion, which he confirms by the ſingle experiment to be mentioned by and by. Mean time, it is evident, that if the water which glides paſt the body cannot fall in behind it with ſufficient velocity for filling up the ſpace behind, there muſt be a void there; and thus a hydroſtatical preſſure muſt be ſuperadded to the reſiſtance ariſing from the inertia of the water. All muſt have obſerved, that if the end of a ſtick held in the hand be drawn ſlowly through the water, the water will fill the place left by the ſtick, and there will be no curled wave: but if the motion be very rapid, a hollow trough or gutter is left behind, and is not filled up till at ſome diſtance from the ſtick, and the wave which forms its ſides is very much broken and curled. The writer of this article has often looked into the water from the poop of a ſecond rate man of war when ſhe was ſailing 11 miles per hour, which is a velocity of 16 feet per ſecond nearly; and he not only obſerved that the back of the rudder was naked for about two feet below the load water-line, but alſo that the trough or wake made by the ſhip was filled up with water which was broken and foaming to a conſiderable depth, and to a conſiderable diſtance from the veſſel: There muſt therefore have been

a void,

Reſiſtance. a void. He never ſaw the wake perfectly tranſparent (and therefore completely filled with water) when the velocity exceeded 9 or 10 feet per ſecond. While this broken water is obſerved, there can be no doubt that there is a void and an additional reſiſtance. But even when the ſpace left by the body, or the ſpace behind a ſtill body expoſed to a ſtream, is completely filled, it may not be filled ſufficiently faſt, and there may be (and certainly is, as we ſhall ſee afterwards) a quantity of water behind the body, which is moving more ſlowly away than the reſt, and therefore hangs in ſome ſhape by the body, and is dragged by it, increaſing the reſiſtance. The quantity of this muſt depend partly on the velocity of the body or ſtream, and partly on the rapidity with which the ſurrounding water comes in behind. This laſt muſt depend on the preſſure of the ſurrounding water. It would appear, that when this adjoining preſſure is very great, as muſt happen when the depth is great, the augmentation of reſiſtance now ſpoken of would be leſs. Accordingly this appears in Newton's experiments, where the balls were leſs retarded as they were deeper under water.

Theſe experiments are ſo ſimple in their nature, and were made with ſuch care, and by a perſon ſo able to detect and appreciate every circumſtance, that they deſerve great credit, and the concluſions *legitimately* drawn from them deſerve to be conſidered as phyſical laws. We think that the preſent deduction is unexceptionable: for in the motion of balls, which hardly deſcended, their preponderancy being hardly ſenſible, the effect of depth muſt have borne a very great proportion to the whole reſiſtance, and muſt have greatly influenced their motions; yet they were obſerved to fall as if the reſiſtance had no way depended on the depth.

The ſame thing appears in Borda's experiments, where a ſphere which was deeply immerſed in the water was leſs reſiſted than one that moved with the ſame velocity near the ſurface; and this was very conſtant and regular in a courſe of experiments. D'Ulloa, however, affirms the contrary: He ſays that the reſiſtance of a board, which was a foot broad, immerſed one foot in a ſtream moving two feet per ſecond, was $15\frac{1}{2}$ lbs. and the reſiſtance to the ſame board, when immerſed 2 feet in a ſtream moving $1\frac{1}{3}$ feet per ſecond (in which caſe the ſurface was 2 feet), was $26\frac{1}{4}$ pounds (A).

29 Singularity of D'Ulloa's experiments.

We are very ſorry that we cannot give a proper account of this theory of reſiſtance by Don George Juan D'Ulloa, an author of great mathematical reputation, and the inſpector of the marine academies in Spain. We have not been able to procure either the original or the French tranſlation, and judge of it only by an extract by Mr Prony in his *Architecture Hydraulique*, § 868. &c. The theory is enveloped (according to Mr Prony's cuſtom) in the moſt complicated expreſſions, ſo that the phyſical principles are kept almoſt out of ſight. When accommodated to the ſimpleſt poſſible caſe, it is nearly as follows.

30 His theory of reſiſtance.

Let o be an elementary orifice or portion of the ſurface of the ſide of a veſſel filled with a heavy fluid, and let h be its depth under the horizontal ſurface of the fluid. Let δ be the denſity of the fluid, and φ the accelerative power of gravity, $= 32$ feet velocity acquired in a ſecond. Reſiſtance.

It is known, ſays he, that the water would flow out at this hole with the velocity $u = \sqrt{2\varphi h}$, and $u^2 = 2\varphi h$ and $h = \frac{u^2}{2\varphi}$. It is alſo known that the preſſure p on the orifice o is $\varphi \cdot o \cdot \delta \cdot h, = \varphi \cdot o \cdot \delta \frac{u^2}{2\varphi}, = \frac{1}{2} \delta \cdot o \cdot u^2$.

Now let this little ſurface o be ſuppoſed to move with the velocity v. The fluid would meet it with the velocity $u + v$, or $u - v$, according as it moved in the oppoſite or in the ſame direction with the efflux. In the equation $p = \frac{1}{2} \delta \cdot o \cdot u^2$, ſubſtitute $u \mp v$ for u, and we have the preſſure on $o = p = \frac{\delta \cdot o}{2}(u \mp v)^2, = \frac{\delta o}{2}(\sqrt{2\varphi h} \mp v^2)$.

This preſſure is a weight, that is, a maſs of matter m actuated by gravity φ, or $p = \varphi m$, and $m = \delta \cdot o \left(\sqrt{h} \mp \frac{v}{\sqrt{2\varphi}}\right)^2$.

This elementary ſurface being immerſed in a ſtagnant fluid, and moved with the velocity v, will ſuſtain on one ſide a preſſure $\delta \cdot o \left(\sqrt{h} + \frac{v}{\sqrt{2\varphi}}\right)^2$ and on the other ſide a preſſure $\delta \cdot o \left(\sqrt{h} - \frac{v}{\sqrt{2\varphi}}\right)^2$; and the ſenſible reſiſtance will be the difference of theſe two preſſures, which is $\delta \cdot o \cdot 4\sqrt{h}\frac{v}{\sqrt{2\varphi}}$, or $\delta \cdot o \cdot 4\sqrt{h}\frac{v}{8}$, that is, $\frac{\delta \cdot o \sqrt{h} \cdot v}{2}$, becauſe $\sqrt{2\varphi} = 8$; a quantity which is in the ſubduplicate ratio of the depth under the ſurface of the fluid, and the ſimple ratio of the velocity of the reſiſted ſurface jointly.

There is nothing in experimental philoſophy more certain than that the reſiſtances are very nearly in the duplicate ratio of the velocities; and we cannot conceive by what experiments the ingenious author has ſupported this concluſion.

31 Defect in his inveſtigation.

But there is, beſides, what appears to us to be an eſſential defect in this inveſtigation. The equation exhibits no reſiſtance in the caſe of a fluid without weight. Now a theory of the reſiſtance of fluids ſhould exhibit the retardation ariſing from inertia alone, and ſhould diſtinguiſh it from that ariſing from any other cauſe: and moreover, while it *aſſigns* an ultimate ſenſible reſiſtance proportional *(cæteris paribus)* to the ſimple velocity, it *aſſumes* as a firſt principle that the preſſure p is as $u \mp v^2$. It alſo gives a falſe meaſure of the ſtatical preſſures: for theſe (in the caſe of bodies immerſed in our waters at leaſt) are made up of the preſſure of the incumbent water, which is meaſured by h, and the preſſure of the atmoſphere, a conſtant quantity.

Whatever reaſon can be given for ſetting out with the principle that the preſſure on the little ſurface o, moving with the velocity u, is equal to $\frac{1}{2} \delta \cdot o \cdot (u \mp v)^2$, makes it indiſpenſably neceſſary to take for the velocity u,

(A) There is ſomething very unaccountable in theſe experiments. The reſiſtances are much greater than any other author has obſerved.

Resistance.

...which water would issue from a hole whose depth under the surface is h, but the velocity with which it will issue from a hole whose depth is $h + 33$ feet. Because the pressure of the atmosphere is equal to that of a column of water 33 feet high: for this is the acknowledged velocity with which it would rush in to the void left by the body. If we reject this velocity (which does not exist) has any share in the effect, we must have for the fluxion of pressure not $\frac{\dot{v}\sqrt{v}}{\sqrt{2g}}$ but $\frac{\dot{v}\sqrt{v}}{\sqrt{2g}} \pm \frac{\dot{v}\sqrt{33}}{\sqrt{2g}}$. This would not only give pressure or resistances many times exceeding those that have been observed in our experiments, but would also totally change the proportions which this theory determines. It was at any rate improper to embarrass an investigation, already very intricate, with the pressure of gravity, and with two motions of efflux, which do not exist, and are necessary for making the pressures in the ratio of $u + v^2$ and $u - v^2$.

Mr Prony has been at no pains to inform his readers of his reasons for adopting this theory of resistance, so contrary to all received opinions, and to the most distinct experiments. Those of the French academy, made under greater pressures, gave a much smaller resistance; and the very experiments adduced in support of this theory are extremely deficient, wanting fully $\frac{1}{3}$d of what the theory requires. The resistances by experiment were $15\frac{1}{4}$ and $26\frac{1}{4}$, and the theory required $20\frac{1}{2}$ and 39. The equation, however, deduced from the theory is greatly deficient in the expression of the pressures caused by the accumulation and depression, stating the heights of them as $= \frac{v^2}{2g}$. They can never be so high, because the heaped up water flows off at the sides, and it all comes in behind by the sides; so that the pressure is much less than half the weight of a column whose height is $\frac{v^2}{2g}$; both because the accumulation and depression are less at the sides than in the middle, and because, when the body is wholly immersed, the accumulation is greatly diminished. Indeed in this case the final equation does not include their effects, though as real in this case as when part of the body is above water.

Upon the whole, we are somewhat surprised that an author of D'Ulloa's eminence should have adopted a theory so unnecessarily and so improperly embarrassed with foreign circumstances; and that Mr Prony should have inserted it with the explanation by which he was to abide, in a work destined for practical use.

This point, or the effect of deep immersion, is still much contested; and it is a received opinion, by many not accustomed to mathematical researches, that the resistance is greater in greater depths. This is assumed as an important principle by Mr Gordon, author of *A theory of Naval Architecture*: but on very vague and slight grounds; and the author seems unacquainted with the manner of reasoning on such subjects. It shall be considered afterwards.

With these corrections, it may be asserted that theory and experiment agree very well in this respect, and that the resistance may be asserted to be in the duplicate ratio of the velocity.

We have been more minute on this subject, because it is the leading proposition in the theory of the action of fluids. Newton's demonstration of it takes no notice of the manner in which the various particles of the fluid are put into motion, or the motion which each in particular acquires. He only shows, that if there be nothing concerned in the communication but pure inertia, the sum total of the motions of the particles, estimated in the direction of the body's motion, or that of the stream, will be in the duplicate ratio of the velocity. It was therefore of importance to show that this part of the theory was just. To do this, we had to consider the effect of every circumstance which could be combined with the inertia of the fluid. All these had been foreseen by that great man, and are most briefly, though perspicuously, mentioned in the last scholium to prop. 36. B. II.

32 Impulse and resistances nearly in proportion of the surfaces.

2. It appears from a comparison of all the experiments, that the impulses and resistances are very nearly in the proportion of the surfaces. They appear, however, to increase somewhat faster than the surfaces. The Chevalier Borda found that the resistance, with the same velocity, to a surface of

$$\left.\begin{matrix} 9 \text{ inches} \\ 16 \\ 36 \\ 81 \end{matrix}\right\} \text{ was } \left\{\begin{matrix} 9 \\ 17{,}535 \\ 42{,}750 \\ 104{,}735 \end{matrix}\right\} \text{ instead of } \left\{\begin{matrix} 9 \\ 16 \\ 36 \\ 81 \end{matrix}\right.$$

The deviation in these experiments from the theory increases with the surface, and is probably much greater in the extensive surfaces of the sails of ships and windmills, and the hulls of ships.

3. The resistances do by no means vary in the duplicate ratio of the sines of the angles of incidence.

As this is the most interesting circumstance, having a chief influence on all the particular modifications of the resistance of fluids, and as on this depends the whole theory of the construction and working of ships, and the action of water on our most important machines, and seems most immediately connected with the mechanism of fluids, it merits a very particular consideration. We cannot do a greater service than by rendering more generally known the excellent experiments of the French academy.

33 Experiments of the French academy, Plate ccccxxxvi.

Fifteen boxes or vessels were constructed, which were two feet wide, and two feet deep, and four feet long. One of them was a parallelopiped of these dimensions; the others had prows of a wedge-form, the angle ACB (fig. 7.) varying by 12° degrees from 12° to 180°; so that the angle of incidence increased by 6° from one to another. These boxes were dragged across a very large basin of smooth water (in which they were immersed two feet) by means of a line passing over a wheel connected with a cylinder, from which the actuating weight was suspended. The motion became perfectly uniform after a very little way; and the time of passing over 96 French feet with this uniform motion was very carefully noted. The resistance was measured by the weight employed, after deducting a certain quantity (properly estimated) for friction, and for the accumulation of the water against the anterior surface. The results of the many experiments are given in the following table; where column 1st contains the angle of the prow, column 2d contains the resistance as given by the preceding theory, column 3d contains the resistance exhibited in the experiments, and column 4th contains the deviation of the experiment from the theory.

Reſiſtance.

I.	II.	III.	IV.
180	10000	10000	0
168	9890	9893	+ 3
156	9568	9578	+ 10
144	9045	9084	+ 39
132	8346	8446	+ 100
120	7500	7710	+ 210
108	6545	6925	+ 380
96	5523	6148	+ 625
84	4478	5433	+ 955
72	3455	4800	+ 1345
60	2500	4404	+ 1904
48	1654	4240	+ 2586
36	955	4142	+ 3187
24	432	4063	+ 3631
12	109	3999	+ 3890

The reſiſtance to 1 ſquare foot, French meaſure, moving with the velocity of 2,56 feet per ſecond, was very nearly 7,625 pounds French.

Reducing theſe to Engliſh meaſures, we have the ſurface = 1,1363 feet, the velocity of the motion equal to 2,7263 feet per ſecond, and the reſiſtance equal to 8,234 pounds avoirdupois. The weight of a column of freſh water of this baſe, and having for its height the fall neceſſary for communicating this velocity, is 8,264 pounds avoirdupois. The reſiſtances to other velocities were accurately proportional to the ſquares of the velocities.

There is great diverſity in the value which different authors have deduced for the abſolute reſiſtance of water from their experiments. In the value now given nothing is taken into account but the inertia of the water. The accumulation againſt the forepart of the box was carefully noted, and the ſtatical preſſure backwards, ariſing from this cauſe, was ſubtracted from the whole reſiſtance to the drag. There had not been a ſufficient variety of experiments for diſcovering the ſhare which tenacity and friction produced; ſo that the number of pounds ſet down here may be conſidered as ſomewhat ſuperior to the mere effects of the inertia of the water. We think, upon the whole, that it is the moſt accurate determination yet given of the reſiſtance to a body in motion: but we ſhall afterwards ſee reaſons for believing, that the impulſe of a running ſtream having the ſame velocity is ſomewhat greater; and this is the form in which moſt of the experiments have been made.

Alſo obſerve, that the reſiſtance here given is that to a veſſel two feet broad and deep and four feet long. The reſiſtance to a plane of two feet broad and deep would probably have exceeded this in the proportion of 15,22 to 14,54, for reaſons we ſhall ſee afterwards.

34 And others. From the experiments of Chevalier Buat, it appears that a body of one foot ſquare, French meaſure, and two feet long, having its centre 15 inches under water, moving three French feet per ſecond, ſuſtained a preſſure of 14,54 French pounds, or 15,63 Engliſh. This reduced in the proportion of 3^2 to $2{,}56^2$ gives 11,43 pounds, conſiderably exceeding the 8,24.

Mr Bouguer, in his *Manœuvre des Vaſſeaux*, ſays, that he found the reſiſtance of ſea-water to a velocity of one foot to be 23 ounces *poids des Marc*.

The Chevalier Borda found the reſiſtance of ſea-water to the face of a cubic foot, moving againſt the water one foot per ſecond, to be 21 ounces nearly. But this experiment is complicated: the wave was not deducted; and it was not a plane, but a cube.

Don George D'Ulloa found the impulſe of a ſtream of ſea-water, running two feet per ſecond on a foot ſquare, to be $15\frac{1}{4}$ pounds Engliſh meaſure. This greatly exceeds all the values given by others.

35 Conſequences from them. From theſe experiments we learn, in the firſt place, that the direct reſiſtance to motion of a plane ſurface through water, is very nearly equal to the weight of a column of water having that ſurface for its baſe, and for its height the fall producing the velocity of the motion. This is but one half of the reſiſtance determined by the preceding theory. It agrees, however, very well with the beſt experiments made by other philoſophers on bodies totally immerſed or ſurrounded by the fluid; and ſufficiently ſhows, that there muſt be ſome fallacy in the principles or reaſoning by which this reſult of the theory is ſuppoſed to be deduced. We ſhall have occaſion to return to this again.

But we ſee that the effects of the obliquity of incidence deviate enormouſly from the theory, and that this deviation increaſes rapidly as the acuteneſs of the prow increaſes. In the prow of 60° the deviation is nearly equal to the whole reſiſtance pointed out by the theory, and in the prow of 12° it is nearly 40 times greater than the theoretical reſiſtance.

The reſiſtance of the prow of 90° ſhould be one half the reſiſtance of the baſe. We have not ſuch a prow; but the medium between the reſiſtance of the prow of 96 and 84 is 5790, inſtead of 500.

Theſe experiments are very conformable to thoſe of other authors on plane ſurfaces. Mr Robins found the reſiſtance of the air to a pyramid of 45°, with its apex foremoſt, was to that of its baſe as 1000 to 1411, inſtead of one to two. Chevalier Borda found the reſiſtance of a cube, moving in water in the direction of the ſide, was to the oblique reſiſtance, when it was moved in the direction of the diagonal, in the proportion of $5\frac{1}{4}$ to 7; whereas it ſhould have been that of $\sqrt{2}$ to 1, or of 10 to 7 nearly. He alſo found, that a wedge whoſe angle was 90°, moving in air, gave for the proportion of the reſiſtances of the edge and baſe 7281 : 10000, inſtead of 5000 : 10000. Alſo when the angle of the wedge was 60°, the reſiſtances of the edge and baſe were 52 and 100, inſtead of 25 and 100.

In ſhort, in all the caſes of oblique plane ſurfaces, the reſiſtances were greater than thoſe which are aſſigned by the theory. The theoretical law agrees tolerably with obſervation in large angles of incidence, that is, in incidences not differing very far from the perpendicular; but in more acute prows the reſiſtances are more nearly proportional to the ſines of incidence than to their ſquares.

The academicians deduced from theſe experiments an expreſſion of the general value of the reſiſtance, which correſponds tolerably well with obſervation. Thus let x be the complement of the half angle of the prow, and let P be the direct preſſure or reſiſtance, with an incidence of 90°, and p the effective oblique preſſure: then $p = \mathrm{P} \times \mathrm{coſine}^2 x + 3{,}153 \left(\frac{x^\circ}{6^\circ}\right)^{3.25}$. This gives for a prow of 12° an error in defect about $\frac{1}{100}$, and in larger angles it is much nearer the truth; and this is exact enough for any practice.

This

Reſiſtance.

The rule above is very ſimple; but if we introduce into the conſideration of the reſiſtances of curvilineal prows, it renders them ſo complicated as to be almoſt uſeleſs; and what is worſe, when the calculation is completed it is contradicted by the reſiſtance which experiment is found to deliver widely from experiment. This ſhows that the motion of the fluid is ſo modified by the action of the moſt prominent part of the prow, that its impulſe on what ſucceeds is greatly affected, ſo that we are not allowed to conſider the prow as compoſed of a number of parts, each of which is affected as if it were detached from all the reſt.

As the very nature of naval architecture ſeems to require curvilineal forms, in order to give the neceſſary ſtrength, it ſeemed of importance to examine more particularly the deviations of the reſiſtances of ſuch prows from the reſiſtances aſſigned by the theory. The academicians therefore made veſſels with prows of a cylindrical ſhape; one of theſe was a half cylinder, and the other was one-third of a cylinder, both having the ſame breadth, viz. two feet, the ſame depth, alſo two feet, and the ſame length, four feet. The reſiſtance of the half cylinder was to the reſiſtance of the perpendicular prow in the proportion of 13 to 25, inſtead of being as 13 to 19,5. The Chevalier Borda found nearly the ſame ratio of the reſiſtances of the half cylinder, and its diametrical plane when moved in air. He alſo compared the reſiſtances of two priſms or wedges, of the ſame breadth and height. The firſt had its ſides plane, inclined to the baſe in angles of 60°: the ſecond had its ſides portions of cylinders, of which the planes were the chords, that is, their ſections were arches of circles of 60°. Their reſiſtances were as 133 to 100, inſtead of being as 133 to 220, as required by the theory; and as the reſiſtance of the firſt was greater in proportion to that of the baſe than the theory allows, the reſiſtance of the laſt was leſs.

Mr Robins found the reſiſtance of a ſphere moving in air to be to the reſiſtance of its great circle as 1 to 2,27; whereas theory requires them to be as 1 to 2. He found, at the ſame time, that the abſolute reſiſtance was greater than the weight of a cylinder of air of the ſame diameter, and having the height neceſſary for acquiring the velocity. It was greater in the proportion of 49 to 40 nearly.

Borda found the reſiſtance of the ſphere moving in water to be to that of its great circle as 1000 to 2008, and it was one-ninth greater than the weight of the column of water whoſe height was that neceſſary for producing the velocity. He alſo found the reſiſtance of air to the ſphere was to its reſiſtance to its great circle as 1 to 2,45.

36 The theory gives the reſiſtance of oblique plane ſurfaces too ſmall, and of curved ſurfaces too great.

It appears, on the whole, that the theory gives the reſiſtance of oblique plane ſurfaces too ſmall, and that of curved ſurfaces too great; and that it is quite unfit for aſcertaining the modifications of reſiſtance ariſing from the figure of the body. The moſt prominent part of the prow changes the action of the fluid on the ſucceeding parts, rendering it totally different from what it would be were that part detached from the reſt, and expoſed to the ſtream with the ſame obliquity. It is of no conſequence, therefore, to deduce any formula from the valuable experiments of the French academy. The experiments themſelves are of great importance, becauſe they give us the impulſes on plane ſurfaces with every obliquity. They therefore put it in our power to ſelect the moſt proper obliquity in a thouſand important caſes. By appealing to them, we can tell what is the proper angle of the ſail for producing the greateſt impulſe in the direction of the ſhip's courſe; or the beſt inclination of the ſail of a wind-mill, or the beſt inclination of the float of a water-wheel, &c. &c. Theſe deductions will be made in their proper places in the courſe of this work. We ſee alſo, that the deviation from the ſimple theory is not very conſiderable till the obliquity is great; and that, in the inclinations which other circumſtances would induce us to give to the floats of water-wheels, the ſails of wind-mills, and the like, the reſults of the theory are ſufficiently agreeable to experiment, for rendering this theory of very great uſe in the conſtruction of machines. Its great defect is in the impulſions on curved ſurfaces, which puts a ſtop to our improvement of the ſcience of naval architecture, and the working of ſhips.

But it is not enough to detect the faults of this theory: we ſhould try to amend it, or to ſubſtitute another. It is a pity that ſo much ingenuity ſhould have been thrown away in the application of a theory ſo defective. Mathematicians were ſeduced, as has been already obſerved, by the opportunity which it gave for exerciſing their calculus, which was a new thing at the time of publiſhing this theory. Newton ſaw clearly the defects of it, and makes no uſe of any part of it in his ſubſequent diſcuſſions, and plainly has uſed it merely as an introduction, in order to give ſome general notions in a ſubject quite new, and to give a demonſtration of one leading truth, viz. the proportionality of the impulſions to the ſquares of the velocities. While we profeſs the higheſt reſpect for the talents and labours of the great mathematicians who have followed Newton in this moſt difficult reſearch, we cannot help being ſorry that ſome of the greateſt of them continued to attach themſelves to a theory which he neglected, merely becauſe it afforded an opportunity of diſplaying their profound knowledge of the new calculus, of which they were willing to aſcribe the diſcovery to Leibnitz. It has been in a great meaſure owing to this that we have been ſo late in diſcovering our ignorance of the ſubject. Newton had himſelf pointed out all the defects of this theory; and he ſet himſelf to work to diſcover another which ſhould be more conformable to the nature of things, retaining only ſuch deductions from the other as his great ſagacity aſſured him would ſtand the teſt of experiment. Even in this he ſeems to have been miſtaken by his followers. He retained the proportionality of the reſiſtance to the ſquare of the velocity. This they have endeavoured to demonſtrate in a manner conformable to Newton's determination of the oblique impulſes of fluids; and under the cover of the agreement of this propoſition with experiment, they introduced into mechanics a mode of expreſſion, and even of conception, which is inconſiſtent with all accurate notions on theſe ſubjects. Newton's propoſition was, that the motions communicated to the fluid, and therefore the motions loſt by the body, in equal times, were as the ſquares of the velocities; and he conceived theſe as proper meaſures of the reſiſtances. It is a matter of experience, that the forces or preſſures by which a body muſt be ſupported in oppoſition to the impulſes of fluids, are in this very proportion. In determining the

37 Its defects pointed out by Newton.

proportion

Reſiſtance. *proportion* of the direct and oblique reſiſtances of plane ſurfaces, he conſiders the reſiſtances to ariſe from mutual colliſions of the ſurface and fluid, repeated at intervals of time too ſmall to be perceived. But in making this compariſon, he has no occaſion whatever to conſider this *repetition*; and when he aſſigns the proportion between the reſiſtance of a cone and of its baſe, he, in fact, aſſigns the proportion between two *ſimultaneous* and inſtantaneous impulſes. But the mathematicians who followed him have conſidered this repetition as equivalent to an augmentation of the initial or firſt impulſe; and in this way have attempted to demonſtrate that the reſiſtances are as the ſquares of the velocities. When the velocity is double, each impulſe is double, and the number in a given time is double; therefore, ſay they, the reſiſtance, and the force which will withſtand it, is quadruple; and obſervation confirms their deduction: yet nothing is more gratuitous and illogical. It is very true, that the reſiſtance, conceived as Newton conceives it, the loſs of motion ſuſtained by a body moving in the fluid, is quadruple; but the inſtantaneous impulſe, and the force which can withſtand it, is, by all the laws of mechanics, only double. What is

38 No compariſon between impulſe and preſſure.

the force which can withſtand a double impulſe? Nothing but a double impulſe. Nothing but impulſe can be oppoſed to impulſe; and it is a groſs miſconception to think of ſtating any kind of compariſon between impulſe and preſſure. It is this which has given riſe to much jargon and falſe reaſoning about the force of percuſſion. This is ſtated as infinitely greater than any preſſure, and as equivalent to a preſſure infinitely repeated. It forced the abettors of theſe doctrines at laſt to deny the exiſtence of all preſſures whatever, and to aſſert that all motion, and tendency to motion, was the reſult of impulſe. The celebrated Euler, perhaps the firſt mathematician, and the loweſt philoſopher, of this century, ſays, "ſince motion and impulſe are ſeen to exiſt, and ſince we ſee that by means of motion preſſure may be produced, as when a body in motion ſtrikes another, or as when a body moving in a curved channel preſſes upon it, merely in conſequence of its curvilineal motion, and the exertion of a centrifugal force; and ſince Nature is moſt wiſely economical in all her operations; it is abſurd to ſuppoſe that preſſure, or tendency to motion, has any other origin; and it is the buſineſs of a philoſopher to diſcover by what motions any obſerved preſſure is produced." Whenever any preſſure is obſerved, ſuch as the preſſure of gravity, of magnetiſm, of electricity, of condenſed air, nay, of a ſpring, and of elaſticity and coheſion themſelves, however deſperate, nay, oppoſite, the philoſopher muſt immediately caſt about, and contrive a ſet of motions (creating *pro re natâ* the movers) which will produce a preſſure like the one obſerved. Having pleaſed his fancy with this, he cries out ἡύρηκα "this *will produce* the preſſure;" *et fruſtra fit per plura quod fieri poteſt per pauciora*, "therefore in this way the preſſure *is* produced." Thus the vortices of Deſcartes are brought back in triumph, and have produced vortices without number, which fill the univerſe with motion and preſſure.

Such bold attempts to overturn long-received doctrines in mechanics, could not be received without much criticiſm and oppoſition; and many able diſſertations appeared from time to time in defence of the common doctrines. In conſequence of the many objections to the compariſon of pure preſſure with pure percuſſion or impulſe, John Bernoulli and others were at laſt obliged to aſſert that there were no perfectly hard bodies in nature, nor could be, but that all bodies were elaſtic; and that in the communication of motion by percuſſion, the velocities of both bodies were *gradually* changed by their mutual elaſticity acting during the finite but imperceptible time of the colliſion. This was, in fact, giving up the whole argument, and baniſhing percuſſion, while their aim was to get rid of preſſure. For what is elaſticity but a preſſure? and how ſhall *it* be produced? To act in this inſtance, muſt it ariſe from a ſtill ſmaller impulſe? But this will require another elaſticity, and ſo on without end. Reſiſtance.

Theſe are all legitimate conſequences of this attempt to ſtate a compariſon between percuſſion and preſſure. Numberleſs experiments have been made to confirm the ſtatement; and there is hardly an itinerant-lecturing ſhowman who does not exhibit among his apparatus Graveſand's machine (Vol. I. plate xxxv. fig. 4). But nothing affords ſo ſpecious an argument as the experimented proportionality of the impulſe of fluids to the ſquare of the velocity. Here is every appearance of the accumulation of an infinity of minute impulſes, in the known ratio of the velocity, each to each, producing preſſures which are in the ratio of the ſquares of the velocities.

The preſſures are obſerved; but the impulſes or percuſſions, whoſe accumulation produces theſe preſſures, are only ſuppoſed. The rare fluid, introduced by Newton for the purpoſe already mentioned, either does not exiſt in nature, or does not act in the manner we have ſaid, the particles making their impulſe, and then eſcaping through among the reſt without affecting their motion. We cannot indeed ſay what may be the proportion between the diameter and the diſtance of the particles. The firſt may be incomparably ſmaller than the ſecond, even in mercury, the denſeſt fluid which we are familiarly acquainted with; but although they do not touch each other, they act nearly as if they did, in conſequence of their mutual attractions and repulſions. We have ſeen air a thouſand times rarer in ſome experiments than in others, and therefore the diſtance of the particles at leaſt ten times greater than their diameters; and yet, in this rare ſtate, it propagates all preſſures or impulſes made on any part of it to a great diſtance, almoſt in an inſtant. It cannot be, therefore, that fluids act on bodies by impulſe. It is very poſſible to conceive a fluid advancing with a flat ſurface againſt the flat ſurface of a ſolid. The very firſt and ſuperficial particles may make an impulſe; and if they were annihilated, the next might do the ſame: and if the velocity were double, theſe impulſes would be double, and would be withſtood by a double force, and not a quadruple, as is obſerved: and this very circumſtance, that a quadruple force is neceſſary, ſhould have made us conclude that it was not to impulſe that this force was oppoſed. The firſt particles having made their ſtroke, and not being annihilated, muſt eſcape literally. In their eſcaping, they effectually prevent every farther impulſe, becauſe they come in the way of thoſe filaments which would have ſtruck the body. The whole proceſs ſeems to be ſomewhat as follows:

39 But a very ſmall part of a fluid can make any impulſe on a ſurface.

When the flat ſurface of the fluid has come into contact with the plane ſurface AD (fig. 6.), perpendicular

Plate CCCCXXXVI.

Reſiſtance. to the direction DC of their motion, they muſt deflect to both ſides equally, and in equal portions, becauſe no reaſon can be aſſigned why more ſhould go to either ſide. By this means the filament LF, which would have ſtruck the ſurface in G, is deflected from its courſe at the ſurface, and deſcribes a curved path LFHK, continuing its rectilineal motion to I, where it is intercepted by a filament immediately adjoining to EF, on the ſide of the middle filament DC. The different particles of DC may be ſuppoſed to impinge in ſucceſſion at C, and to be deflected at right angles; and glancing along CB, to impinge at B. Each filament in ſucceſſion, towards from DC, is deflected in its turn; and being hindered from ever touching the ſurface CB, it glides off in a direction parallel to it; and thus EF is deflected at I, moves parallel to CB from I to H, and is again deflected at right angles, and deſcribes HK parallel to DC. The ſame thing may be ſuppoſed to happen on the other ſide of DC.

And thus it would appear that except two filaments immediately adjoining to the line DC, which biſects the ſurface at right angles, no part of the fluid makes any impulſe on the ſurface AB. All the other filaments are merely preſſed againſt it by the lateral filaments without them, which they turn aſide, and prevent from ſtriking the ſurface.

Plate CCLXXXVI.

40 No impulſe on the edge of a priſm.

In like manner, when the fluid ſtrikes the edge of a priſm or wedge ACB (fig. 7.), it cannot be ſaid that any real impulſe is made. Nothing hinders us from ſuppoſing C a mathematical angle or indiviſible point, not ſuſceptible of any impulſe, and ſerving merely to divide the ſtream. Each filament EF is effectually prevented from impinging at G in the line of its direction, and with the obliquity of incidence EGC, by the filaments between EF and DC, which glide along the ſurface CA; and it may be ſuppoſed to be deflected when it comes to the line CF which biſects the angle DCA, and again deflected and rendered parallel to DC at I. The ſame thing happens on the other ſide of DC; and we cannot in this caſe aſſert that there is any impulſe.

41 The ordinary theory of no uſe in naval architecture.

We now ſee plainly how the ordinary theory muſt be totally unfit for furniſhing principles of naval architecture even although a formula could be deduced from ſuch a ſeries of experiments as thoſe of the French Academy. Although we ſhould know preciſely the impulſe, or, to ſpeak now more cautiouſly, the action of the fluid on a ſurface GL (fig. 8.) of any obliquity, when it is alone, detached from all others, we cannot in the ſmalleſt degree tell what will be the action of *part* of a ſtream of fluid advancing towards it, with the ſame obliquity, when it is preceded by an adjoining ſurface CG, having a different inclination; for the fluid will not glide along GL in the ſame manner as if it made part of a more extenſive ſurface having the ſame inclination. The previous deflections are extremely different in theſe two caſes; and the previous deflections are the only changes which we can obſerve in the motions of the fluid, and the only cauſes of that preſſure which we obſerve the body to ſuſtain, and which we call the impulſe on it. This theory muſt, therefore, be quite unfit for aſcertaining the action on a curved ſurface, which may be conſidered as made up of an indefinite number of ſucceſſive planes.

We now ſee with equal evidence how it happens that the action of fluids on ſolid bodies may and muſt be oppoſed by preſſures, and may be compared with and meaſured by the preſſure of gravity. We are not comparing forces of different kinds, percuſſions with preſſures, but preſſures with each other. Let us ſee whether this view of the ſubject will afford us any method of compariſon or abſolute meaſurement. Reſiſtance. 42 Preſſure, the action of fluids,

When a filament of fluid, that is, a row of corpuſcles, are turned out of their courſe EF (fig. 6.), and forced to take another courſe IH, force is required to produce this change of direction. The filament is prevented from proceeding by other filaments which lie between it and the body, and which deflect it in the ſame manner as if it were contained in a bended tube, and it will preſs on the concave filament next to it as it would preſs on the concave ſide of the tube. Suppoſe ſuch a bended tube ABE (fig. 9.), and that a ball A is projected along it with any velocity, and moves in it without friction: it is demonſtrated, in elementary mechanics, that the ball will move with undiminiſhed velocity, and will preſs on every point, ſuch as B, of the concave ſide of the tube, in a direction BF perpendicular to the plane CBD, which touches the tube in the point B. This preſſure on the adjoining filament, on the concave ſide of its path, muſt be withſtood by that filament which deflects it; and it muſt be propagated acroſs that filament to the next, and thus augment the preſſure upon the next filament already preſſed by the deflection of that intermediate filament; and thus there is a preſſure towards the middle filament, and towards the body, ariſing from the deflection of all the outer filaments; and their accumulated ſum muſt be conceived as immediately exerted on the middle filaments and on the body, becauſe a perfect fluid tranſmits every preſſure undiminiſhed.

The preſſure BF is equivalent to the two BH, BG one of which is perpendicular, and the other parallel, to the direction of the original motion. By the firſt, (taken in any point of the curvilineal motion of any filament), the two halves of the ſtream are preſſed together; and in the caſe of fig. 6. and 7. exactly balance each other. But the preſſures, ſuch as BG, muſt be ultimately withſtood by the ſurface ACB; and it is by theſe accumulated preſſures that the ſolid body is urged down the ſtream; and it is theſe accumulated preſſures which we obſerve and meaſure in our experiments. We ſhall anticipate a little, and ſay that it is moſt eaſily demonſtrated, that when a ball A (fig. 9.) moves with undiminiſhed velocity in a tube ſo incurvated that its axis at E is at right angles to its axis at A, the accumulated action of the preſſures, ſuch as BG, taken for every point of the path, is preciſely equal to the force which would produce or extinguiſh the original motion.

This being the caſe, it follows moſt obviouſly, that if the two motions of the filaments are ſuch as we have deſcribed and repreſented by fig. 6. the whole preſſure in the direction of the ſtream, that is, the whole preſſure which can be obſerved on the ſurface, is equal to the weight of a column of fluid having the ſurface for its baſe, and twice the fall productive of the velocity for its height, preciſely as Newton deduced it from other conſiderations; and it ſeems to make no odds whether the fluid be elaſtic or unelaſtic, if the deflections and velocities are the ſame. Now it is a fact, that no difference in this reſpect 43 Whether they be elaſtic or not.

Reſiſtance. ſpect can be obſerved in the actions of air and water; and this had always appeared a great defect in Newton's theory: but it was only a defect of the theory attributed to him. But it is alſo true, that the obſerved action is but one-half of what is juſt now deduced from this improved view of the ſubject. Whence ariſes this difference? The reaſon is this: We have given a very erroneous account of the motions of the filaments. A filament EF does not move as repreſented in fig. 6. with two rectangular inflections at I and at H, and a path IH between them parallel to CB. The proceſs of nature is more like what is repreſented in fig. 10. *It is obſerved*, that at the anterior part of the body AB, there remains a quantity of fluid ADB, almoſt, if not altogether, ſtagnant, of a ſingular ſhape, having two curved concave ſides A *a* D, B *b* D, along which the middle filaments glide. This fluid is very ſlowly changed.—

44 Important experiments by Sir Charles Knowles.

The late Sir Charles Knowles, an officer of the Britiſh navy, equally eminent for his ſcientific profeſſional knowledge and for his military talents, made many beautiful experiments for aſcertaining the paths of the filaments of water. At a diſtance up the ſtream, he allowed ſmall jets of a coloured fluid, which did not mix with water, to make part of the ſtream; and the experiments were made in troughs with ſides and bottom of plate-glaſs. A ſmall taper was placed at a conſiderable height above, by which the ſhadows of the coloured filaments were moſt diſtinctly projected on a white plane held below the trough, ſo that they were accurately drawn with a pencil. A few important particulars may be here mentioned.

The ſtill water ADC laſted for a long while before it was renewed; and it ſeemed to be gradually waſted by abraſion, by the adheſion of the ſurrounding water, which gradually licked away the outer parts from D to A and B; and it ſeemed to renew itſelf in the direction CD, oppoſite to the motion of the ſtream.

There was, however, a conſiderable intricacy and eddy in this motion. Some (ſeemingly ſuperficial) water was continually, but ſlowly, flowing outward from the line DC, while other water was ſeen within and below it, coming inwards and going backwards.

The coloured lateral filaments were moſt conſtant in their form, while the body was the ſame, although the velocity was in ſome caſes quadrupled. Any change which this produced ſeemed confined to the ſuperficial filaments. As the filaments were deflected, they were alſo conſtipated, that is, the curved parts of the filaments were nearer each other than the parallel ſtraight filaments up the ſtream; and this conſtipation was more conſiderable as the prow was more obtuſe and the deflection greater.

The inner filaments were ultimately more deflected than thoſe without them; that is, if a line be drawn touching the curve EFIH in the point H of contrary flexure, where the concavity begins to be on the ſide next the body, the angle HKC, contained between the axis and this tangent line, is ſo much the greater as the filament is nearer the axis.

When the body expoſed to the ſtream was a box of upright ſides, flat bottom, and angular prow, like a wedge, having its edge alſo upright, the filaments were not all deflected laterally, as theory would make us expect; but the filaments near the bottom were alſo deflected downwards as well as laterally, and glided along at ſome diſtance under the bottom, forming lines of double curvature. Reſiſtance.

The breadth of the ſtream that was deflected was much greater than that of the body; and the ſenſible deflection begun at a conſiderable diſtance up the ſtream, eſpecially in the outer filaments.

Laſtly, the form of the curves was greatly influenced by the proportion between the width of the trough and that of the body. The curvature was always leſs when the trough was very wide in proportion to the body.

Great varieties were alſo obſerved in the motion or velocity of the filaments. In general, the filaments increaſed in velocity outwards from the body to a certain ſmall diſtance, which was nearly the ſame in all caſes, and then diminiſhed all the way outward. This was obſerved by inequalities in the colour of the filaments, by which one could be obſerved to outſtrip another. The retardation of thoſe next the body ſeemed to proceed from friction; and it was imagined that without this the velocity there would always have been greateſt.

43 With inferences from them.

Theſe obſervations give us conſiderable information reſpecting the mechaniſm of theſe motions, and the action of fluids upon ſolids. The preſſure in the duplicate ratio of the velocities comes here again into view. We found, that although the velocities were very different, the curves were preciſely the ſame. Now the obſerved preſſures ariſe from the tranſverſe forces by which each particle of a filament is retained in its curvilineal path; and we know that the force by which a body is retained in any curve is directly as the ſquare of the velocity, and inverſely as the radius of curvature. The curvature, therefore, remaining the ſame, the tranſverſe forces, and conſequently the preſſure on the body, muſt be as the ſquare of the velocity: and, on the other hand, we can ſee pretty clearly (indeed it is rigorouſly demonſtrated by D'Alembert), that whatever be the velocities, the curves *will* be the ſame. For it is known in hydraulics, that it requires a fourfold or ninefold preſſure to produce a double or triple velocity. And as all preſſures are propagated through a perfect fluid without diminution, this fourfold preſſure, while it produces a double velocity, produces alſo fourfold tranſverſe preſſures, which will retain the particles, moving twice as faſt, in the ſame curvilineal paths. And thus we ſee that the impulſes, as they are called, and reſiſtances of fluids, have a certain relation to the weight of a column of fluid, whoſe height is the height neceſſary for producing the velocity. How it happens that a plane ſurface, immerſed in an extended fluid, ſuſtains juſt half the preſſure which it would have ſuſtained had the motions been ſuch as are ſketched in figure 6th, is a matter of more curious and difficult inveſtigation. But we ſee evidently that the preſſure muſt be leſs than what is there aſſigned; for the ſtagnant water a-head of the body greatly diminiſhes the ultimate deflections of the filaments: And it may be demonſtrated, that when the part BE of the canal, fig. 9. is inclined to the part AB in an angle leſs than 90°, the preſſures BG along the whole canal are as the verſed ſine of the ultimate angle of deflection, or the verſed ſine of the angle which the part BE makes with the part AB. Therefore, ſince the deflections reſemble more the ſketch given in fig. 10. the accumulated ſum of all theſe forces BG of fig. 9. muſt be leſs than the ſimilar ſum correſponding to fig. 6. that is, leſs than

Reſiſtance the weight of the column of fluid, having twice the motive height for its height. It is not quite half, but is near that matter.

And here we muſt return to the [illegible] Sir Iſaac Newton. After many beautiful obſervations on the nature and mechanism of continued fluids, he ſays, that the reſiſtance which either ſolids or fluids meet with is occaſioned by the two fluids which have been the ſubject of his former propoſitions; "which truth," ſays he, with his uſual candour and modeſty, "I ſhall endeavour to ſhew."

46 Newton enters into another, as novel and as difficult an inveſtigation, viz. the laws of hydraulics, and endeavours to aſcertain the motion of fluids through orifices when urged by preſſures of any kind. He endeavours to aſcertain the velocity with which a fluid eſcapes through a horizontal orifice in the bottom of a veſſel, by the action of its weight, and the preſſure which this vein of fluid will exert on a little circle which occupies part of the orifice. To obtain this, he employs a kind of approximation and trial, of which it would be extremely difficult to give an extract; and then, by increaſing the diameter of the veſſel and of the hole to infinity, he accommodates his reaſoning to the caſe of a plane ſurface expoſed to an indefinitely extended ſtream of fluid; and laſtly, giving to the little circular ſurface the motion which he had before aſcribed to the fluid, he ſays, that the reſiſtance to a plane ſurface moving through an unelaſtic continuous fluid, is equal to the weight of a column of the fluid whoſe height is one-half of that neceſſary for acquiring the velocity; and he ſays, that the reſiſtance of a globe is, in this caſe, the ſame with that of a cylinder of the ſame diameter. The reſiſtance, therefore, of the cylinder or circle is four times leſs, and that of the globe is twice leſs than their reſiſtances on a rare elaſtic medium.

47 Liable to great objections.

But this determination, though founded on principles or aſſumptions, which are much nearer to the real ſtate of things, is liable to great objections. It depends on his method for aſcertaining the velocity of the iſſuing fluid; a method extremely ingenious, but defective. The cataract, which he ſuppoſes, cannot exiſt as he ſuppoſes, deſcending by the full action of gravity, and ſurrounded by a funnel of ſtagnant fluid. For, in ſuch circumſtances, there is nothing to balance the hydroſtatical preſſure of the ſurrounding fluid; becauſe the whole preſſure of the central cataract is employed in producing its own deſcent. In the next place, the preſſure which he determines is beyond all doubt only half of what is obſerved on a plane ſurface in all our experiments. And, in the third place, it is repugnant to all our experience, that the reſiſtance of a globe or of a cylinder ſhould be as great as that of its circular baſe. His reaſons are by no means convincing. He ſuppoſes them placed in a tube or canal; and ſince they are ſuppoſed of the ſame diameter, and therefore leave equal ſpace at their ſides, he concludes, that becauſe the water eſcapes by their ſides with the ſame velocity, they will have the ſame reſiſtance. But this is by no means a neceſſary conſequence. Even if the water ſhould be allowed to exert equal preſſures on them, the preſſures being perpendicular to their ſurfaces, and theſe ſurfaces being inclined to the axis, while in the caſe of the baſe of a cylinder it is in the direction of the axis, there muſt be a difference in the accumulated or compound preſſure in the direction Reſiſtance.
of the axis. He indeed ſays, that in the caſe of the cylinder or the circle obſtructing the canal, a quantity of water remains ſtagnant on its upper ſurface; viz. all the water whoſe motion would not contribute to the moſt ready paſſage of the fluid between the cylinder and the ſides of the canal or tube; and that this water may be conſidered as frozen. If this be the caſe, it is indifferent what is the form of the body that is covered with the mals of frozen or ſtagnant water. It may be a ſpheroid or a cone; the reſiſtance will be the ſame.—But Newton by no means aſſigns, either with preciſion or with diſtinct evidence, the form and magnitude of this ſtagnant water, ſo as to give confiſtence to the ſolids. He contents himſelf with ſaying, that the water whoſe motion is not neceſſary or eaſieſt contributes to the moſt eaſy paſſage of the water.

48 Though diſplaying great ſagacity.

There remains, therefore, many imperfections in this theory. But notwithſtanding theſe defects, we cannot but admire the chaſte and ingenuity of this great philoſopher, who, after having diſcovered ſo many ſublime truths of mechanical nature, ventured to trace out a path for the ſolution of a problem which no perſon had yet attempted to bring within the range of mathematical inveſtigation. And his ſolution, though inaccurate, ſhines throughout with that inventive genius and that fertility of reſource, which no man ever poſſeſſed in ſo eminent a degree.

Thoſe who have attacked the ſolution of Sir Iſaac Newton have not been more ſucceſsful. Moſt of them, inſtead of principles, have given a great deal of calculus; and the chief merit which any of them can claim, is that of having deduced ſome ſingle propoſition which happens to quadrate with ſome ſingle caſe of experiment, while their general theories are either inapplicable, from difficulty, and obſcurity, or are diſcordant with more general obſervation.

We muſt, however, except from this number Daniel Bernoulli, who was not only a great geometer, but one of the firſt philoſophers of the age. He poſſeſſed all the talents, and was free from the faults of that celebrated family; and while he was the mathematician of Europe who penetrated fartheſt in the inveſtigation of this great problem, he was the only perſon who felt, or at leaſt who acknowledged, its great difficulty.

49 Bernoulli's general formula founded on hypotheſis.

In the 2d volume of the *Comment. Petropol.* 1727, he propoſes a formula for the reſiſtance of fluids, deduced from conſiderations quite different from thoſe on which Newton founded his ſolution. But he delivers it with moſt diffidence; becauſe he found that it gave a reſiſtance four times greater than experiment. In the ſame diſſertation he determines the reſiſtance of a ſphere to be one half of that of its great circle. But in his ſubſequent theory of Hydrodynamics (a work which muſt ever rank among the firſt productions of the age, and is equally eminent for refined and elegant mathematics, and ingenious and original thoughts in dynamics), he calls this determination in queſtion. It is indeed founded on the ſame hypothetical principles which have been unſkilfully detached from the reſt of Newton's phyſics, and made the ground-work of all the ſubſequent theories on this ſubject.

In 1741 Mr Daniel Bernoulli publiſhed another diſſertation

Reſiſtance.

50
He treats the ſubject in a particular caſe with great preciſion.

fertation (in the 8th volume of the *Com. Petropol.*) on the action and reſiſtance of fluids, limited to a very particular caſe; namely, to the impulſe of a vein of fluid falling perpendicularly on an infinitely extended plane ſurface. This he demonſtrates to be equal to the weight of a column of the fluid whoſe baſe is the area of the vein, and whoſe height is twice the fall producing the velocity. This demonſtration is drawn from the true principles of mechanics and the acknowledged laws of hydraulics, and may be received as a ſtrict phyſical demonſtration. As it is the only propoſition in the whole theory that has as yet received a demonſtration acceſſible to readers not verſant in all the refinement of modern analyſis; and as the principles on which it proceeds will undoubtedly lead to a ſolution of every problem which can be propoſed, once that our mathematical knowledge ſhall enable us to apply them—we think it our duty to give it in this place, although we muſt acknowledge, that this problem is ſo very limited, that it will hardly bear an application to any caſe that differs but a little from the expreſs conditions of the problem. There do occur caſes however in practice, where it may be applied to very great advantage.

Daniel Bernoulli gives two demonſtrations; one of which may be called a popular one, and the other is more ſcientific and introductory to further inveſtigation. We ſhall give both.

51
Determines the action exerted in the efflux of a vein of fluid.

Bernoulli firſt determines the whole action exerted in the efflux of the vein of fluid. Suppoſe the velocity of efflux v is that which would be acquired by falling through the height h. It is well known that a body moving during the time of this fall with the velocity v would deſcribe a ſpace $2h$. The effect, therefore, of the hydraulic action is, that in the time t of the fall h, there iſſues a cylinder or priſm of water whoſe baſe is the croſs ſection f or area of the vein, and whoſe length is $2h$. And this quantity of matter is now moving with the velocity v. The quantity of motion, therefore, which is thus produced is $2fhv$; and this quantity of motion is produced in the time t. And this is the accumulated effect of all the expelling forces, eſtimated in the direction of the efflux. Now, to compare this with the exertion of ſome preſſing power with which we are familiarly acquainted, let us ſuppoſe this pillar $2fh$ to be frozen, and, being held in the hand, to be dropped. It is well known, that in the time t it will fall through the height h, and will acquire the velocity v, and now poſſeſſes the quantity of motion $2fhv$—and all this is the effect of its weight. The weight, therefore, of the pillar $2fh$ produces the ſame effect, and in the ſame time, and (as may eaſily be ſeen) in the ſame gradual manner, with the expelling forces of the fluid in the veſſel, which expelling forces ariſe from the preſſure of all the fluid in the veſſel. Therefore the accumulated hydraulic preſſure, by which a vein of a heavy fluid is forced out through an orifice in the bottom or ſide of a veſſel, is equal (when eſtimated in the direction of the efflux) to the weight of a column of the fluid, having for its baſe the ſection of the vein, and twice the fall productive of the velocity of efflux for its height.

Plate ccccxxxvi.

Now let ABDC (fig. 11.) be a quadrangular veſſel with upright plane ſides, in one of which is an orifice EF. From every point of the circumference of this orifice, ſuppoſe horizontal lines Ee, Ff, &c. which will mark a ſimilar ſurface on the oppoſite ſide of the veſſel. Suppoſe the orifice EF to be ſhut. There can be no doubt but that the ſurfaces EF and ef will be equally preſſed in oppoſite directions. Now open the orifice EF; the water will ruſh out, and the preſſure on EF is now removed. There will therefore be a tendency in the veſſel to move back in the direction Ee. And this tendency muſt be preciſely equal and oppoſite to the whole effort of the expelling forces. This is a concluſion as evident as any propoſition in mechanics. It is thus that a gun recoils and a rocket riſes in the air; and on this is founded the operation of Mr Parents or Dr Barker's mill, deſcribed in all treatiſes of mechanics, and moſt learnedly treated by Euler in the Berlin Memoirs. Reſiſtance.

Now, let this ſtream of water be received on a circular plane MN, perpendicular to its axis, and let this circular plane be of ſuch extent, that the vein eſcapes from its ſides in an infinitely thin ſheet, the water flowing off in a direction parallel to the plane. The vein by this means will expand into a trumpet like ſhape, having curved ſides, EKG, FLH. We abſtract at preſent the action of gravity, which would cauſe the vein to bend downwards, and occaſion a greater velocity at H than at G; and we ſuppoſe the velocity equal in every point of the circumference. It is plain, that if the action of gravity be neglected after the water has iſſued through the orifice EF, the velocity in every point of the circumference of the plane MN will be that of the efflux through EF.

Now, becauſe EKG is the natural ſhape aſſumed by the vein, it is plain, that if the whole vein were covered by a tube or mouth-piece, fitted to its ſhape, and perfectly poliſhed, ſo that the water ſhall glide along it, without any friction (a thing which we may always ſuppoſe), the water will exert no preſſure whatever on this trumpet mouth-piece. Laſtly, let us ſuppoſe that the plane MN is attached to the mouth-piece by ſome bits of wire, ſo as to allow the water to eſcape all round by the narrow chink between the mouth-piece and the plane: We have now a veſſel conſiſting of the upright part ABDC, the trumpet GKEFLH, and the plane MN; and the water is eſcaping from every point of the circumference of the chink GHNM with the velocity v. If any part of this chink were ſhut up, there would be a preſſure on that part equivalent to the force of efflux from the oppoſite part. Therefore, when all is open, theſe efforts of efflux balance each other all round. There is not therefore any tendency in this compound veſſel to move to any ſide. But take away the plane MN, and there would immediately ariſe a preſſure in the direction Ee equal to the weight of the column $2fh$. This is therefore balanced by the preſſure on the circular plane MN, which is therefore equal to this weight, and the propoſition is demonſtrated.

A number of experiments were made by Profeſſor Kraft at St Peterſburg, by receiving the vein on a plane MN (fig. 11.) which was faſtened to the arm of a balance OPQ, having a ſcale R hanging on the oppoſite arm. The reſiſtance or preſſure on the plane was meaſured by weights put into the ſcale R; and the velocity of the jet was meaſured by means of the diſtance KH, to which it ſpouted on a horizontal plane.

The

[illegible] experiments were as conformable [illegible] be wished. The resistance was [illegible] what the theory required, but [illegible] its half; the result of the general re- [illegible] theorem. This defect should be expected; for the demonstration supposes the plane MN to be infinitely extended, so that the film of water which issues through the chink may be accurately parallel to the plane. This never can be completely effected. Also it was supposed, that the velocity was justly measured by the amplitude of the parabola EGK. But it is well known that the very putting the plane MN in the way of the jet, though at the distance of an inch from the orifice, will diminish the velocity of the efflux through this orifice. This is easily verified by experiment. Observe the time in which the vessel will be emptied when there is no plane in the way. Repeat the experiment with the plane in its place; and more time will be necessary. The following is a note of a course of experiments, taken as they stand, without any selection.

	N° 1	2	3	4	5	6
Resist. by theory	1701	1720	1651	1602	1528	1072
Resist. by experiment	1403	1463	1486	1401	1403	1021
Difference	298	257	165	201	125	51

In order to demonstrate this proposition in such a manner as to furnish the means of investigating the whole mechanism and action of moving fluids, it is necessary to premise an elementary theorem of curvilineal motions.

Plate [illegible] CCXXXVI.

If a particle of matter describes a curve line ABCE (fig. 13.) by the continual action of deflecting forces, which vary in any manner, both with respect to intensity and direction, and if the action of these forces, in every point of the curve, be resolved into two directions, perpendicular and parallel to the initial direction AK; then,

1. The accumulated effect of the deflecting forces, estimated in a direction AD perpendicular to AK, is to the final quantity of motion as the sine of the final change of direction is to radius.

13. This proposition demonstrated.

Let us first suppose that the accelerating forces act by starts, at equal intervals of time, when the body is in the points A, B, C, E. And let AN be the deflecting force, which, acting at A, changes the original direction AK to AB. Produce AB till BH = AB, and complete the parallelogram BFCH. Then FB is the force which, by acting at B, changed the motion BH (the continuation of AB) to BC. In like manner make C*b* (in BC produced) equal to BC, and complete the parallelogram C*f*E*b*. C*f* is the deflecting force at C, &c. Draw BO parallel to AN, and GBK perpendicular to AK. Also draw lines through C and E perpendicular to AK, and draw through B and C lines parallel to AK. Draw also HL, *hi* perpendicular, and FG, HI, *hi*, parallel to AK.

It is plain that BK is BO or AN estimated in the direction perpendicular to AK, and that BG is BF estimated in the same way. And since BH = AB, HL or IM is equal to BK. Also CI is equal to BG. Therefore CM is equal to AP+BG. By similar reasoning it appears that E*m* = E*i*+*hl*, = C*g* + CM, = C*g* + B[illegible], + AP.

Therefore if CE be taken for the measure of the final velocity or quantity of motion, E*m* will be the accumulated effect of the deflecting forces estimated in the direction AD perpendicular to AK. But E*m* is to CE as the sine of *m*CE is to radius; and the angle *m*CE is the angle contained between the initial and final directions, because C*m* is parallel to AK. Now let the intervals of time diminish continually and the frequency of the impulses increase. The deflection becomes ultimately continuous, and the motion curvilineal, and the proposition is demonstrated.

Resistance.

We see that the initial velocity and its subsequent changes do not affect the conclusion, which depends entirely on the final quantity of motion.

2. The accumulated effect of the accelerating forces, when estimated in the direction AK of the original motion, or in the opposite direction, is equal to the difference between the initial quantity of motion and the product of the final quantity of motion by the cosine of the change of direction.

For C*m* = C*l* — *ml*, = BM — *fq*
BM = BL — ML, = AK — FG
AK = AO — OK, = AO — PN.

Therefore PN + FG + *f*Q (the accumulated impulse in the direction OA) = AO — CM, = AO — $\overline{\text{CE} \times \text{cosine of ECM}}$.

Cor. 1. The same action, in the direction opposite to that of the original motion, is necessary for causing a body to move at right angles to its former direction as for stopping its motion. For in this case, the cosine of the change of direction is = *o*, and AO — CE × cosine ECM = AO — *o*, = AO, = the original motion.

Cor. 2. If the initial and final velocities are the same, the accumulated action of the accelerating forces, estimated in the drection OA, is equal to the product of the original quantity of motion by the versed sine of the change of direction.

The application of these theorems, particularly the second, to our present purpose is very obvious. All the filaments of the jet were originally moving in the direction of its axis, and they are finally moving along the resisting plane, or perpendicular to their former motion. Therefore their transverse forces in the direction of the axis are (*in cumulo*) equal to to the force which would stop the motion. For the aggregate of the simultaneous forces of every particle in the whole filament is the same with that of the successive forces of one particle, as it arrives at different points of its curvilineal path. All the transverse forces, estimated in a direction perpendicular to the axis of the vein, precisely balance and sustain each other; and the only forces which can produce a sensible effect are those in a direction parallel to the axis. By these all the inner filaments are pressed towards the plane MN, and must be withstood by it. It is highly probable, nay certain, that there is a quantity of stagnant water in the middle of the vein which sustains the pressures of the moving filaments without it, and transmits it to the solid plane. But this does not alter the case. And, fortunately, it is of no consequence what changes happen in the velocities of the particles while each is describing its own curve. And it is from this circumstance, peculiar to this particular case of perpendicular impulse, that we are able to draw the conclusion. It is by no means difficult to demonstrate that the velocity of the external surface of this jet is constant, and indeed of every jet which is not acted on by external forces after it has quitted the orifice: but this discussion is quite unnecessary here. It is however extremely difficult to ascertain, even in this most simple case,

Reſiſtance. caſe, what is the velocity of the internal filaments in the different points of their progreſs.

Such is the demonſtration which Mr Bernoulli has given of this propoſition. Limited as it is, it is highly valuable, becauſe derived from the true principles of hydraulics.

He hoped to render it more extenſive and applicable to oblique impulſes, when the axis AC of the vein (fig. 13. n° 2.) is inclined to the plane in an angle ACN. But here all the ſimplicity of the caſe is gone, and we are now obliged to aſcertain the motion of each filament. It might not perhaps be impoſſible to determine what muſt happen in the plane of the figure, that is, in a plane paſſing through the axis of the vein, and perpendicular to the plane MN. But even in this caſe it would be extremely difficult to determine how much of the fluid will go in the direction EKG, and what will go in the path FLH, and to aſcertain the form of each filament, and the velocity in its different points. But in the real ſtate of the caſe, the water will diſſipate from the centre C on every ſide; and we cannot tell in what proportions. Let us however conſider a little what happens in the plane of the figure, and ſuppoſe that all the water goes either in the courſe EKG, or in the courſe FLH. Let the quantities of water which take theſe two courſes have the proportions of p and π. Let $\sqrt{2a}$ be the velocity at A, $\sqrt{2b}$ be the velocity at G, and $\sqrt{2\beta}$ be the velocity at H. ACG and ACH are the two changes of direction, of which let c and $-c$ be the coſines. Then, adopting the former reaſoning, we have the preſſure of the watery plate GKEACM on the plane in the direction AC $= \frac{p}{p+\pi} \times \overline{2a-2cb}$, and the preſſure of the plate HLFACN $= \frac{\pi}{p+\pi} \times \overline{2a+2c\beta}$, and their ſum $= \frac{p \times \overline{2a-2cb} + \pi \times \overline{2a+2c\beta}}{p+\pi}$; which being multiplied by the ſine of ACM or $\sqrt{1-c^2}$, gives the preſſure perpendicular to the plane MN $= \frac{p \times 2a - 2cb + \pi \times 2a}{p+\pi} \overline{+2c\beta} \sqrt{1-c^2}$.

54 His theory attempted in vain to be rendered general.

But there remains a preſſure in the direction perpendicular to the axis of the vein, which is not balanced, as in the former caſe, by the equality on oppoſite ſides of the axis. The preſſure ariſing from the water which eſcapes at G has an effect oppoſite to that produced by the water which eſcapes at H. When this is taken into account, we ſhall find that their joint efforts perpendicular to AC are $\frac{p-\pi}{p+\pi} \times 2a\sqrt{1-c^2}$, which, being multiplied by the coſine of ACM, gives the action perpendicular to MN $= \frac{p-\pi}{p+\pi} \times zac\sqrt{1-c^2}$.

The ſum or joint effort of all theſe preſſures is $\frac{p \times \overline{2a-2cb} + \pi \times \overline{2a+2c\beta}}{p+\pi}\sqrt{1-c^2} + \frac{p-\pi}{p+\pi} \times 2ac\sqrt{1-c^2}$.

Thus, from this caſe, which is much ſimpler than can happen in nature, ſeeing that there will always be a lateral efflux, the determination of the impulſe is as uncertain and vague as it was ſure and preciſe in the former caſe.

It is therefore without proper authority that the abſolute impulſe of a vein of fluid on a plane which receives it wholly, is aſſerted to be proportional to the ſine of incidence. If indeed we ſuppoſe the velocity in G and H are equal to that at A, then $b=\beta$, $=a$, and the whole impulſe is $2a\sqrt{1-c^2}$, as is commonly ſuppoſed. But this cannot be. Both the velocity and quantity at H are leſs than thoſe at G. Nay, frequently there is no efflux on the ſide H when the obliquity is very great. We may conclude in general, that the oblique impulſe will always bear to the direct impulſe a greater proportion than that of the ſine of incidence to radius. If the whole water eſcapes at G, and none goes off laterally, the preſſure will be $\overline{2a+2ac-2bc} \times \sqrt{1-c^2}$. The experiments of the Abbe Boſſut ſhow in the plaineſt manner that the preſſure of a vein, ſtriking obliquely on a plane which receives it wholly, diminiſhes faſter than in the ratio of the ſquare of the ſine of incidence; whereas, when the oblique plane is wholly immerſed in the ſtream, the impulſe is much greater than in this proportion, and in great obliquities is nearly as the ſine. Reſiſtance.

Nor will this propoſition determine the impulſe of a fluid on a plane wholly immerſed in it, even when the impulſe is perpendicular to the plane. The circumſtance is now wanting on which we can eſtabliſh a calculation, namely, the angle of final deflection. Could this be aſcertained for each filament, and the velocity of the filament, the principles are completely adequate to an accurate ſolution of the problem. In the experiments which we mentioned to have been made under the inſpection of Sir Charles Knowles, a cylinder of ſix inches diameter was expoſed to the action of a ſtream moving preciſely one foot per ſecond; and when certain deductions were made for the water which was held adhering to the poſterior baſe (as will be noticed afterwards), the impulſe was found equal to $3\frac{1}{8}$ ounces avoirdupois. There were 36 coloured filaments diſtributed on the ſtream, in ſuch ſituations as to give the moſt uſeful indications of their curvature. It was found neceſſary to have ſome which paſſed under the body and ſome above it; for the form of theſe filaments, at the ſame diſtance from the axis of the cylinder, was conſiderably different: and thoſe filaments which were ſituated in planes neither horizontal nor vertical took a double curvature. In ſhort, the curves were all traced with great care, and the deflecting forces were computed for each, and reduced to the direction of the axis; and they were ſummed up in ſuch a manner as to give the impulſe of the whole ſtream. The deflections were marked as far a-head of the cylinder as they could be aſſuredly obſerved. By this method the impulſe was computed to be $2\frac{15}{16}$ ounces, differing from obſervation $\frac{3}{16}$ of an ounce, or about $\frac{1}{16}$ of the whole; a difference which may moſt reaſonably be aſcribed to the adheſion of the water, which muſt be moſt ſenſible in ſuch ſmall velocities. Theſe experiments may therefore be conſidered as giving all the confirmation that can be deſired of the juſtneſs of the principles. This indeed hardly admits of a doubt: but, alas! it gives us but ſmall aſſiſtance; for all this is empirical, in as far as it leaves us in every caſe the taſk of obſerving the form of the curves and the velocities in their different points. To derive ſervice from this moſt judicious method of Daniel Bernoulli, we muſt diſcover ſome method of determining

à priori,

the velocity for its height, and the small excefs is moft probably owing to adhefion, and the meafure of the real refiftance is probably precifely this weight. The velocity of a fpouting fluid was found, in fact, to be that acquired by falling from the furface of the fluid; and it was by looking at this, as at a pole ftar, that Newton, Bernoulli, and others, have with great fagacity and ingenuity difcovered much of the laws of hydraulics, by fearching for principles which would give this refult. We may hope for fimilar fuccefs. Refiftance.

In the mean time, we may receive this as a phyfical truth, that the perpendicular impulfe or refiftance of a plane furface, wholly immerfed in the fluid, is equal to the weight of the column having the furface for its bafe, and the fall producing the velocity for its height.

This is the medium refult of all experiments made in thefe precife circumftances. And it is confirmed by a fet of experiments of a kind wholly different, and which feem to point it out more certainly as an immediate confequence of hydraulic principles.

56 Experiment by Mr Pitot's tube. Plate cccexxxvi.

If Mr Pitot's tube be expofed to a ftream of fluid iffuing from a reiervoir or veffel, as repreiented in fig. 14. with the open mouth I pointed directly againft the ftream, the fluid is obferved to ftand at K in the upright tube, precifely on a level with the fluid AB in the reiervoir. Here is a moft unexceptionable experiment, in which the impulfe of the ftream is actually oppofed to the hydroftatical preffure of the fluid on the tube. Preffure is in this cafe oppofed to preffure, becaufe the iffuing fluid is deflected by what ftays in the mouth of the tube, in the fame way in which it would be deflected by a firm furface. We fhall have occafion by and by to mention fome moft valuable and inftructive experiments made with this tube.

57 Eu'er's theory.

It was this which fuggefted to the great mathematician Euler another theory of the impulfe and refiftance of fluids, which muft not be omitted, as it is applied in his elaborate performance On the Theory of the Conftruction and working of Ships, in two volumes 4to, which was afterwards abridged and ufed as a text book in fome marine academies. He fuppofes a ftream of fluid ABCD (fig. 15.), moving with any velocity, to ftrike the plane bD perpendicularly, and that part of it goes through a hole EF, forming a jet EGHF. Mr Euler fays, that the velocity of this jet will be the fame with the velocity of the ftream. Now compare this with an equal ftream iffuing from a hole in the fide of a veffel with the fame velocity. The one ftream is urged out by the preffure occafioned by the impulfe of the fluid; the other is urged out by the preffure of gravity. The effects are equal, and the modifying circumftances are the fame. The caufes are therefore equal, and the preffure occafioned by the impulfe of a ftream of fluid, moving with any velocity, is equal to the weight of a column of fluid whofe height is productive of this velocity, &c. He then determines the oblique impulfe by the refolution of motion, and deduces the common rules of resistance, &c.

But all this is without juft grounds. This gentleman was always fatisfied with the flighteft analogies which would give him an opportunity of exhibiting his great dexterity in algebraic analyfis, and was not afterwards ftartled by any difcordancy with obfervation. *Nature is fimple* is a frequent affertion with him.

Though

Reſiſtance. Though he wrote a large volume, containing a theory of light and colours totally oppoſite to Newton's he has publiſhed many diſſertations on optical phenomena on the Newtonian principles, expreſsly becauſe his own principles *non ideo facile anſam præbebat analyſi inſtruendæ.*

58 Without foundation. Not a ſhadow of argument is given for the leading principle in this theory, *viz.* that the velocity of the jet is the ſame with the velocity of the ſtream. None can be given, but ſaying that the preſſure is equivalent to its production; and this is aſſuming the very thing he labours to prove. The matter of fact is, that the velocity of the jet is greater than that of the ſtream, and may be greater almoſt in any proportion. Which curious circumſtance was diſcovered and ingeniouſly explained long ago by Daniel Bernoulli in his *Hydrodynamica.* It is evident that the velocity muſt be greater. Were a ſtream of ſand to come againſt the plane, what goes through would indeed preſerve its velocity unchanged: but when a real fluid ſtrikes the plane, all that does not paſs through is deflected on all ſides; and by theſe deflections forces are excited, by which the filaments which ſurround the cylinder immediately fronting the hole are made to preſs this cylinder on all ſides, and as it were ſqueeze it between them: and thus the particles at the hole muſt of neceſſity be accelerated, and the velocity of the jet muſt be greater than that of the ſtream. We are diſpoſed to think that, in a fluid perfectly incompreſſible, the velocity will be doubled, or at leaſt increaſed in the proportion of 1 to $\sqrt{2}$. If the fluid is in the ſmalleſt degree compreſſible, even in the very ſmall degree that water is, the velocity at the firſt impulſe may be much greater. D. Bernoulli found that a column of water moving 5 feet per ſecond, in a tube ſome hundred feet long, produced a velocity of 136 feet per ſecond, in the firſt moment.

There being this radical defect in the theory of Mr Euler, it is needleſs to take notice of its total inſufficiency for explaining oblique impulſes and the reſiſtance of curvilineal prows.

59 Ingenious ſolution of d'Alembert. We are extremely ſorry that our readers are deriving ſo little advantage from all that we have ſaid; and that having taken them by the hand, we are thus obliged to grope about, with only a few ſcattered rays of light to direct our ſteps. Let us ſee what aſſiſtance we can get from Mr d'Alembert, who has attempted a ſolution of this problem in a method entirely new and extremely ingenious. He ſaw clearly that all the followers of Newton had forſaken the path which he had marked out for them in the ſecond part of his inveſtigation, and had merely amuſed themſelves with the mathematical diſcuſſions with which his introductory hypotheſis gave them an opportunity of occupying themſelves. He paid the deſerved tribute of applauſe to Daniel Bernoulli for having introduced the notion of pure preſſure as the chief agent in this buſineſs; and he ſaw that he was in the right road, and that it was from hydroſtatical principles alone that we had any chance of explaining the phenomena of hydraulics. Bernoulli had only conſidered the preſſures which were excited in conſequence of the curvilineal motions of the particles. Mr d'Alembert even thought that theſe preſſures were not the conſequences, but the cauſes, of theſe curvilineal motions. No internal motion can happen in a fluid but in conſequence of an unbalanced preſſure; and every ſuch motion will produce an inequality of preſſure, which will determine the ſucceeding motions. He therefore endeavoured to reduce all to the diſcovery of theſe diſturbing preſſures, and thus to the laws of hydroſtatics. He had long before this hit on a very refined and ingenious view of the action of bodies on each other, which had enabled him to ſolve many of the moſt difficult problems concerning the motions of bodies, ſuch as the centre of oſcillation, of ſpontaneous converſion, the preceſſion of the equinoxes, &c. &c. with great facility and elegance. He ſaw that the ſame principle would apply to the action of fluid bodies. The principle is this. Reſiſtance.

"*In whatever manner any number of bodies are ſuppoſed to act on each other, and by theſe actions come to change their preſent motions, if we conceive that the motion which each body would have in the following inſtant (if it became free), is reſolved into two other motions; one of which is the motion which it really takes in the following inſtant; the other will be ſuch, that if each body had no other motion but this ſecond, the whole bodies would have remained in equilibrio.*" We here obſerve, that "the motion which each body would have in the following inſtant, if it became free," is a continuation of the motion which it has in the firſt inſtant. If may therefore perhaps be better expreſſed thus:

If the motions of bodies, anyhow acting on each other, be conſidered in two conſecutive inſtants, and if we conceive the motion which it has in the firſt inſtant as compounded of two others, one of which is the motion which it actually takes in the ſecond inſtant, the other is ſuch, that if each body had only thoſe ſecond motions, the whole ſyſtem would have remained in equilibrio.

The propoſition itſelf is evident. For if theſe ſecond motions be not ſuch as that an equilibrium of the whole ſyſtem would reſult from them, the other component motions would not be thoſe which the bodies really have after the change; for they would neceſſarily be altered by theſe unbalanced motions. See D'Alembert *Eſſai de Dynamique.*

Aſſiſted by this inconteſtible principle, Mr d'Alembert demonſtrates, in a manner equally new and ſimple, thoſe propoſitions which Newton had ſo cautiouſly deduced from his hypothetical fluid, ſhowing that they were not limited to this hypotheſis, *viz.* that the motions produced by ſimilar bodies, ſimilarly projected in them, would be ſimilar; that whatever were the preſſures, the curves deſcribed by the particles would be the ſame; and that the reſiſtances would be proportional to the ſquares of the velocities. He then comes to conſider the fluid as having its motions conſtrained by the form of the canal or by ſolid obſtacles interpoſed.

60 Summary account of his fundamental propoſition. We ſhall here give a ſummary account of his fundamental propoſition.

It is evident, that if the body ADCE (fig. 16.) did not form an obſtruction to the motion of the water, the particles would deſcribe parallel lines TF, OK, PS, &c. But while yet at a diſtance from the body in F, K, S, they gradually change their directions, and deſcribe the curves FM, K *m*, S *n*, ſo much more incurvated as they are nearer to the body. At a certain diſtance ZY this curvature will be inſenſible, and the fluid included in the ſpace ZYHQ will move uniformly as if the ſolid body were not there. The motions on the other ſide of the axis AC will be the ſame; and we need only attend Plate ccccxxxvi.

[illegible] ...ined to one half, and we ſhall conſider theſe as in a ſtate of permanency.

No body changes either its direction or velocity otherwiſe than by inſenſible degrees: therefore the particle which is moving in the axis will not reach the vertex A of the body, where it behoved to deſcribe inſtantaneouſly at right angles. It will therefore begin to be deflected at ſome point F a-head of the body, and will deſcribe a curve FM, touching the axis in F, and the body in M; and then, gliding along the body, will quit it at ſome point L, deſcribing a tangent curve, which will join the axis again (touching it) in R; and then there will be a quantity of ſtagnant water FAM before or a-head of the body, and another LCR behind or aſtern of it.

Let a be the velocity of a particle of the fluid in any inſtant, and a' its velocity in the next inſtant. The velocity a may be conſidered as compounded of a' and a''. If the particles tended to move with the velocities a'' only, the whole fluid would be in equilibrio (general principle), and the preſſure of the fluid would be the ſame as if all were ſtagnant, and each particle were urged by a force $\frac{a''}{t}$, t expreſſing an indefinitely ſmall moment of time. (*N. B.* $\frac{a''}{t}$ is the proper expreſſion of the accelerating force, which, by acting during the moment t, would generate the velocity a''; and a'' is ſuppoſed an indeterminate quantity, different perhaps for each particle). Now let a be ſuppoſed conſtant, or $a = a$. In this caſe $a'' = o$. That is to ſay, no preſſure whatever will be exerted on the ſolid body unleſs there happen changes in the velocities or directions of the particles.

Let a and a' then be the motions of the particles in two conſecutive inſtants. They would be in equilibrio if urged only by the forces $\frac{a''}{t}$. Therefore if γ be the point where the particles which deſcribe the curve FM begin to change their velocity, the preſſure in D would be equal to the preſſure which the fluid contained in the canal γ FMD would exert, if each particle were ſolicited by its force $\frac{a''}{t}$. The queſtion is therefore reduced to the finding the curvature in the canal γ FMD, and the accelerating forces $\frac{a''}{t}$ in its different parts.

It appears, in the firſt place, that no preſſure is exerted by any of the particles along the curve FM: for ſuppoſe that the particle a (fig. 17.) deſcribes the indefinitely ſmall ſtraight line ab in the firſt inſtant, and bc in the ſecond inſtant; produce ab till $bd = ab$, and joining dc, the motion ab or bd may be conſidered as compoſed of bc, which the particle really takes in the next inſtant, and a motion dc which ſhould be deſtroyed. Draw bi parallel to dc, and ie perpendicular to bc. It is plain that the particle b, ſolicited by the forces be, ei (equivalent to dc) ſhould be in equilibrio. This being eſtabliſhed, be muſt be $= o$, that is, there will be no accelerating or retarding force at b; for if there be, draw bm (fig. 18.) perpendicular to bF, and the parallel nq infinitely near it. The part bn of the fluid contained in the canal $bnqm$ would ſuſtain ſome preſſure from b towards n, or from n towards b. Therefore ſince the fluid in this ſtagnant canal ſhould be in equilibrio, there muſt alſo be ſome action, at leaſt in one of the parts bm, mq, qn, to counterbalance the action on the part bn. But the fluid is ſtagnant in the ſpace FAM (in conſequence of the law of continuity). Therefore there is no force which can act on bm, mq, qn; and the preſſure in the canal in the direction bn or nb is nothing, or the force $be = o$, and the force ie is perpendicular to the canal; and there is therefore no preſſure in the canal FM, except what proceeds from the part γ F, or from the force ei; which laſt being perpendicular to the canal, there can be no force exerted on the point M, but what is propagated from the part γ F. Reſiſtance.

The velocity therefore in the canal FM is conſtant if finite, or infinitely ſmall if variable: for, in the firſt caſe, the force be would be abſolutely nothing; and in the ſecond caſe, it would be an infinitefimal of the ſecond order, and may be conſidered as nothing in compariſon with the velocity, which is of the firſt order. We ſhall ſee by and by that the laſt is the real ſtate of the caſe. Therefore the fluid, before it begins to change its direction in F, begins to change its velocity in ſome point γ a-head of F, and by the time that it reaches F its velocity is as it were annihilated.

Cor. 1. Therefore the preſſure in any point D ariſes both from the retardations in the part γ F, and from the particles which are in the canal MD: as theſe laſt move along the ſurface of the body, the force $\frac{a''}{t}$, deſtroyed in every particle, is compounded of two others, one in the direction of the ſurface, and the other perpendicular to it; call theſe p and p'. The point D is preſſed perpendicularly to the ſurface MD; 1ſt, by all the forces p in the curve MD; 2d, by the force p' acting on the ſingle point D. This may be neglected in compariſon of the indefinite number of the others: therefore taking in the arch MD, an infinitely ſmall portion N m, $= s$, the preſſure on D, perpendicular to the ſurface of the body, will be $= \int p\dot{s}$; and this fluent muſt be ſo taken as to be $= o$ in the point M.

Cor. 2. Therefore, to find the preſſure on D, we muſt find the force p on any point N. Let u be the velocity of the particle N, in the direction N m in any inſtant, and $u + \dot{u}$ its velocity in the following inſtant; we muſt have $p = \frac{-\dot{u}}{t}$. Therefore the whole queſtion is reduced to finding the velocity u in every point N, in the direction N m.

61 His final equation truly ſolves the problem; but,

And this is the aim of a ſeries of propoſitions which follow, in which the author diſplays the moſt accurate and preciſe conception of the ſubject, and great addreſs and elegance in his mathematical analyſis. He at length brings out an equation which expreſſes the preſſure on the body in the moſt general and unexceptionable manner. We cannot give an abſtract, becauſe the train of reaſoning is already conciſe in the extreme: nor can we even exhibit the final equation; for it is conceived in the moſt refined and abſtruſe form of indeterminate functions, in order to embrace every poſſible circumſtance. But we can aſſure our readers, that it truly expreſſes the ſolution of the problem. But, alas! it is of

no

Reſiſtance.

62 From the imperfect ſtate of mathematics it is uſeleſs.

no uſe. So imperfect is our mathematical knowledge, that even Mr d'Alembert has not been able to exemplify the application of the equation to the ſimpleſt caſe which can be propoſed, ſuch as the direct impulſe on a plane ſurface wholly immerſed in the fluid. All that he is enabled to do, is to apply it (by ſome modifications and ſubſtitutions which take it out of its ſtate of extreme generality) to the direct impulſe of a vein of fluid on a plane which deflects it wholly, and thus to ſhow its conformity to the ſolution given by Daniel Bernoulli, and to obſervation and experience. He ſhows, that this impulſe (independent of the deficiency ariſing from the plane's not being of infinite extent) is ſomewhat leſs than the weight of a column whoſe baſe is the ſection of the vein, and whoſe height is twice the fall neceſſary for communicating the velocity. This great philoſopher and geometer concludes by ſaying, that he does not believe that any method can be found for ſolving this problem that is more direct and ſimple; and imagines, that if the deductions from it ſhall be found not to agree with experiment, we muſt give up all hopes of determining the reſiſtance of fluids by theory and analytical calculus. He ſays *analytical calculus;* for all the phyſical principles on which the calculus proceeds are rigorouſly demonſtrated, and will not admit of a doubt. There is only one hypotheſis introduced in his inveſtigation, and this is not a phyſical hypotheſis, but a hypotheſis of calculation. It is, that the quantities which determine the ratios of the ſecond fluxions of the velocities, eſtimated in the directions parallel and perpendicular to the axis AC (fig. 16.) are functions of the abſciſſa AP, and ordinate PM of the curve. Any perſon, in the leaſt acquainted with mathematical analyſis, will ſee, that without this ſuppoſition no analyſis or calculus whatever can be inſtituted. But let us ſee what is the *phyſical* meaning of this hypotheſis. It is ſimply this, that the motion of the particle M depends on its ſituation only. It appears impoſſible to form any other opinion; and if we could form ſuch an opinion, it is as clear as day-light that the caſe is deſperate, and that we muſt renounce all hopes.

63 Mathematicians ſhould apply to ſimple caſes;

We are ſorry to bring our labours to this concluſion; but we are of opinion, that the only thing that remains is, for mathematicians to attach themſelves with firmneſs and vigour to ſome ſimple caſes; and, without aiming at generality, to apply Mr d'Alembert's or Bernoulli's mode of procedure to the particular circumſtances of the caſe. It is not improbable but that, in the ſolutions which may be obtained of theſe particular caſes, circumſtances may occur which are of a more general nature. Theſe will be ſo many laws of hydraulics to be added to our preſent very ſcanty ſtock; and theſe may have points of reſemblance, which will give birth to laws of ſtill greater generality. And we repeat our expreſſion of hopes of ſome ſucceſs, by endeavouring to determine, in ſome ſimple caſes, the *minimum poſſibile* of motion. The attempts of the Jeſuit commentators on the *Principia* to aſcertain this on the Newtonian hypotheſis do them honour, and have really given us great aſſiſtance in the particular caſe which came through their hands.

64 And multiply experiments.

And we ſhould multiply experiments on the reſiſtance of bodies. Thoſe of the French academy are undoubtedly of ineſtimable value, and will always be appealed to. But there are circumſtances in thoſe experiments which render them more complicated than is proper for a general theory, and which therefore limit the concluſions which we wiſh to draw from them. The bodies were floating on the ſurface. This greatly modifies the deflections of the filaments of water, cauſing ſome to deflect laterally, which would otherwiſe have remained in one vertical plane; and this circumſtance alſo neceſſarily produced what the academicians called the *remou*, or accumulation on the anterior part of the body, and depreſſion behind it. This produced an additional reſiſtance, which was meaſured with great difficulty and uncertainty. The effect of adheſion muſt alſo have been very conſiderable, and very different in the different caſes; and it is of difficult calculation. It cannot perhaps be totally removed in any experiment, and it is neceſſary to conſider it as making part of the reſiſtance in the moſt important practical caſes, viz. the motion of ſhips. Here we ſee that its effect is very great. Every ſeamen knows that the ſpeed, even of a copper-ſheathed ſhip, is *greatly* increaſed by greaſing her bottom. The difference is too remarkable to admit of a doubt: nor ſhould we be ſurpriſed at this, when we attend to the diminution of the motion of water in long pipes. A ſmooth pipe four and an half inches diameter, and 500 yards long, yields but one-fifth of the quantity which it ought to do independent of friction. But adheſion does a great deal which cannot be compared with friction. We ſee that water flowing thro' a hole in a thin plate will be increaſed in quantity fully one-third, by adding a little tube whoſe length is about twice the diameter of the hole. The adheſion therefore will greatly modify the action of the filaments both on the ſolid body and on each other, and will change both the forms of the curves and the velocities in different points; and this is a ſort of objection to the only hypotheſis introduced by d'Alembert. Yet it is only a ſort of objection; for the effect of this adheſion, too, muſt undoubtedly depend on the ſituation of the particle.

65 The experiments of Robins and Borda ſuſceptible of conſiderable accuracy.

The form of theſe experiments of the academy is ill-ſuited to the examination of the reſiſtance of bodies, wholly immerſed in the fluid. The form of experiment adopted by Robins for the reſiſtance of air, and afterwards by the Chevalier Borda for water, is free from theſe inconveniences, and is ſuſceptible of equal accuracy. The great advantage of both is the exact knowledge which they give us of the velocity of the motion; a circumſtance eſſentially neceſſary, and but imperfectly known in the experiments of Mariotte and others, who examined quieſcent bodies expoſed to the action of a ſtream. It is extremely difficult to meaſure the velocity of a ſtream. It is very different in its different parts. It is ſwifteſt of all in the middle ſuperficial filament, and diminiſhes as we recede from this towards the ſides or bottom, and the rate of diminution is not preciſely known. Could this be aſcertained with the neceſſary preciſion, we ſhould recommend the following form of experiment as the moſt ſimple, eaſy, economical, and accurate.

Plate cccexxxvi.

66 Simple experiment for meaſuring the velocity of a ſtream.

Let *a*, *b*, *c*, *d*, (fig. 19.) be four hooks placed in a horizontal plane at the corners of a rectangular parallelogram, the ſides *a c*, *b d* being parallel to the direction of the ſtream ABCD, and the ſides *a b*, *c d* being perpendicular to it. Let the body G be faſtened to

[illegible] of stiff tempered steel wire, so that the surface on which the fluid is to act may be inclined to the stream in the precise angle we desire. Let this [illegible] have [illegible] at its extremities, which are hitched into the [illegible] equal threads, suspended from the [illegible] and let H [illegible] be a fifth thread suspended from the middle of the line joining the points of [illegible]. Let HIK be a graduated arch, whose centre is H, and whose plane is in the direction of the stream. It is evident that the impulse on the body G will be measured (by a process well known to every mathematician) by the deviation of the thread H [illegible] from the vertical line HI; and this will be done without any intricacy of calculation, or any attention to the centres of gravity, of oscillation, or of percussion. These must be accurately ascertained with respect to that form in which the pendulum has always been employed for measuring the impulse or velocity of a stream. These advantages arise from the circumstance, that the axis [illegible] remains always parallel to the horizon. We may be allowed to observe, by the by, that this would have been a great improvement of the beautiful experiments of Mr Robins and Dr Hutton on the velocities of cannon-shot, and would have saved much intricate calculation, and been attended with many important advantages.

The great difficulty is, as we have observed, to measure the velocity of the stream. Even this may be done in this way with some precision. Let two floating bodies be dragged along the surface, as in the experiments of the academy, at some distance from each other laterally, so that the water between them may not be sensibly disturbed. Let a horizontal bar be attached to them, transverse to the direction of their motion, at a proper height above the surface, and let a spherical pendulum be suspended from this, or let it be suspended from four points, as here described. Now let the deviation of this pendulum be noted in a variety of velocities. This will give us the law of relation between the velocity and the deviation of the pendulum. Now, in making experiments on the resistance of bodies, let the velocity of the stream, in the very filament in which the resistance is measured, be determined by the deviation of this pendulum.

It were greatly to be wished that some more palpable argument could be found for the existence of a quantity of stagnant fluid at the anterior and posterior parts of the body. The one already given, derived from the consideration that no motion changes either its velocity or direction by finite quantities in an instant, is unexceptionable. But it gives us little information. The smallest conceivable extent of the curve FM in fig. 16. will answer this condition, provided only that it touches the axis in some point F, and the body in some point M, so as not to make a [illegible] angle with either. But surely there are [illegible] which [illegible] determine the extent of this stagnant fluid. And it appears without doubt, that if there were no cohesion or friction, this space will have a determined [illegible] the size of the body (the figure of the bodies being supposed similar). Suppose a plane surface AB, as in fig. 10. there can be no doubt but that the figure A a D b B will in every case be similar. But if we suppose an adhesion or tenacity which is constant, this may make a change both in its extent and in its form: for its constancy of form depends on the disturbing forces being always as the squares of the velocity; and this ratio of the disturbing forces is preserved, while the inertia of the fluid is the only agent and patient in the process. But when we add to this the constant (that is, invariable) disturbing force of tenacity, a change of form and dimensions must happen. In like manner, the friction, or something analogous to friction, which produces an effect proportional to the velocity, must alter this necessary ratio of the whole disturbing forces. We may conclude, that the effect of both these circumstances will be to diminish the quantity of this stagnant fluid, by licking it away externally; and to this we must ascribe the fact, that the part FAM is never perfectly stagnant, but is generally disturbed with a whirling motion. We may also conclude, that this stagnant fluid will be more incurvated between F and M than it would have been, independent of tenacity and friction; and that the arch LR will, on the contrary, be less incurvated.—And, lastly, we may conclude, that there will be something opposite to pressure, or something which we may call *abstraction*, exerted on the posterior part of the body which moves in a tenacious fluid, or is exposed to the stream of such a fluid; for the stagnant fluid LCR adheres to the surface LC; and the passing fluid tends to draw it away both by its tenacity and by its friction. This must augment the apparent impulse of the stream on such a body; and it must greatly augment the resistance, that is, the motion lost by this body in its progress through the tenacious fluid; for the body must drag along with it this stagnant fluid, and drag it in opposition to the tenacity and friction of the surrounding fluid. The effect of this is most remarkably seen in the resistances to the motion of pendulums; and the chevalier Buat, in his examination of Newton's experiments, clearly shows that this constitutes the greatest part of the resistance.

Resistance.

This most ingenious writer has paid great attention to this part of the process of nature, and has laid the foundation of a theory of resistance entirely different from all the preceding. We cannot abridge it, and it is too imperfect in its present condition to be offered as a body of doctrine: but we hope that the ingenious auther will prosecute the subject.

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67 Account of the Chevalier Buat's experiments,

We cannot conclude this dissertation (which we acknowledge to be very unsatisfactory and imperfect) better, than by giving an account of some experiments of the chevalier Buat, which seem of immense consequence, and tend to give us very new views of the subject. Mr Buat observed the motion of water issuing from a glass cylinder through a narrow ring formed by a bottom of smaller diameter; that is, the cylinder was open at both ends, and there was placed at its lower end a circle of smaller diameter, by way of bottom, which left a ring all around. He threw some powdered sealing wax into the water, and observed with great attention the motion of its small particles. He saw those which happened to be in the very axis of the cylinder descend along the axis with a motion pretty uniform, till they came very near the bottom; from this they continued to descend very slowly, till they were almost in contact with the bottom; they then deviated from the centre, and approached the orifice in straight

Reſiſtance. ſtraight lines and with an accelerated motion, and at laſt darted into the orifice with great rapidity. He had obſerved a thing ſimilar to this in a horizontal canal, in which he had ſet up a ſmall board like a dam or bar, over which the water flowed. He had thrown a gooſeberry into the water, in order to meaſure the velocity at the bottom, the gooſeberry being a ſmall matter heavier than water. It approached the dam uniformly till about three inches from it. Here it almoſt ſtood ſtill, but it continued to advance till almoſt in contact. It then roſe from the bottom along the inſide of the dam with an accelerated motion, and quickly eſcaped over the top.

Hence he concluded, that the water which covers the anterior part of the body expoſed to the ſtream is not perfectly ſtagnant, and that the filaments recede from the axis in curves, which converge to the ſurface of the body as different hyperbolas converge to the ſame aſſymptote, and that they move with a velocity continually increaſing till they eſcape round the ſides of the body.

He had eſtabliſhed (by a pretty reaſonable theory, confirmed by experiment) a propoſition concerning the preſſure which water in motion exerts on the ſurface along which it glides, viz. *that the preſſure is equal to that which it would exert if at reſt* minus *the weight of the column whoſe height would produce the velocity of the paſſing ſtream.* Conſequently the preſſure which the ſtream exerts on the ſurface perpendicularly expoſed to it will depend on the velocity with which it glides along it, and will diminiſh from the centre to the circumference. This, ſays he, may be the reaſon why the impulſe on a plane wholly immerſed is but one half of that on a plane which deflects the whole ſtream.

68 And of the inſtrument he contrived for examining his theory.

He contrived a very ingenious inſtrument for examining this theory. A ſquare braſs plate ABGF (fig. 20). was pierced with a great number of holes, and fixed in the front of a ſhallow box repreſented edgewiſe in fig. 21. The back of this box was pierced with a hole *c*, in which was inſerted the tube of glaſs CDE, bent ſquare at D. This inſtrument was expoſed to a ſtream of water, which beat on the braſs plate. The water having filled the box through the holes, ſtood at an equal height in the glaſs tube when the ſurrounding water was ſtagnant; but when it was in motion, it always ſtood in the tube above the level of the ſmooth water without, and thus indicated the preſſure occaſioned by the action of the ſtream.

When the inſtrument was not wholly immerſed, there was always a conſiderable accumulation againſt the front of the box, and a depreſſion behind it. The water before it was by no means ſtagnant: indeed it ſhould not be, as Mr Buat obſerves; for it conſiſts of the water which was eſcaping on all ſides, and therefore upwards from the axis of the ſtream, which meets the plate perpendicularly in *c* conſiderably under the ſurface. It eſcapes upwards; and if the body were ſufficiently immerſed, it would eſcape in this direction almoſt as eaſily as laterally. But in the preſent circumſtances, it heaps up, till the elevation occaſions it to fall off ſidewiſe as faſt as it is renewed. When the inſtrument was immerſed more than its ſemidiameter under the ſurface, the water ſtill roſe above the level, and there was a great depreſſion immediately behind this elevation. In conſequence of this difficulty of eſcaping upwards, the water flows off laterally; and if the horizontal dimenſions of the ſurface is great, this lateral efflux becomes more difficult, and acquires a greater accumulation. From this it happens, that the reſiſtance of broad ſurfaces equally immerſed is greater than in the proportion of the breadth. A plane of two feet wide and one foot deep, when it is not completely immerſed, will be more reſiſted than a plane two feet deep and one foot wide; for there will be an accumulation againſt both: and even if theſe were equal in height, the additional ſurface will be greateſt in the wideſt body; and the elevation will be greater, becauſe the lateral eſcape is more difficult. Reſiſtance.

69 Circumſtances chiefly to be attended to in uſing this inſtrument.

The circumſtances chiefly to be attended to are theſe.

The preſſure on the centre was much greater than towards the border, and, in general, the height of the water in the tube DE was more than $\frac{4}{5}$ of the height neceſſary for producing the velocity when only the central hole was open. When various holes were opened at different diſtances from the centre, the height of the water in DH continually diminiſhed as the hole was nearer the border. At a certain diſtance from the border the water at E was level with the ſurrounding water, ſo that no preſſure was exerted on that hole. But the moſt unexpected and remarkable circumſtance was, that, in great velocities, the holes at the very border, and even to a ſmall diſtance from it, not only ſuſtained no preſſure, but even gave out water; for the water in the tube was lower than the ſurrounding water. Mr Buat calls this a *non-preſſion*. In a caſe in which the velocity of the ſtream was three feet, and the preſſure on the central hole cauſed the water in the vertical tube to ſtand 33 lines or $\frac{3}{4}\frac{3}{5}$ of an inch above the level of the ſurrounding ſmooth water, the action on a hole at the lower corner of the ſquare cauſed it to ſtand 12 lines lower than the ſurrounding water. Now the velocity of the ſtream in this experiment was 36 inches *per* ſecond. This requires $21\frac{1}{2}$ lines for its productive fall; whereas the preſſure on the central hole was 33. This approaches to the preſſure on a ſurface which deflects it wholly. The intermediate holes gave every variation of preſſure, and the diminution was more rapid as the holes were nearer the edge; but the law of diminution could not be obſerved.

70 Remarkable circumſtance.

71 Not inconſiſtent with the principles of hydroſtatics or hydraulics.

This is quite a new and moſt unexpected circumſtance in the action of fluids on ſolid bodies, and renders the ſubject more intricate than ever; yet it is by no means inconſiſtent with the genuine principles of hydroſtatics or hydraulics. In as far as Mr Buat's propoſition concerning the preſſure of moving fluids is true, it is very reaſonable to ſay, that when the lateral velocity with which the fluid tends to eſcape exceeds the velocity of percuſſion, the height neceſſary for producing this velocity muſt exceed that which would produce the other, and a non-preſſion muſt be obſerved. And if we conſider the forms of the lateral filaments near the edge of the body, we ſee that the concavity of the curve is turned towards the body, and that the centrifugal forces tend to diminiſh their preſſure on the body. If the middle alone were ſtruck with a conſiderable velocity, the water might even rebound, as is frequently obſerved. This actual rebounding is here prevented by the ſurrounding water, which is moving with the ſame velocity: but the

Resistance.

Part of the resistance is diminished or annihilated by the tendency to the bottom of the vessel in particles.

Part (but perhaps a considerable part) of this apparent resistance is evidently produced by the tenacity of the water, which keeps all with it the water lying in the tube. But, at any rate, this is an important fact, and gives great value to these experiments. It gives a key to many curious phenomena in the resistance of fluids; and the theory of Mr Buat deserves a very serious consideration. It is all contained in the two following propositions.

72 Statement of Mr Buat's theory.

1. "*If, in any single instant, a column of fluid, whether it be part of an indefinite fluid, or contained in fluid canal, comes to meet with a given solidity, the pressure which is immediately before its motion, either on the adjacent fixed points of the canal, is occasioned by the weight of a column having the height necessary for communicating the velocity of the motion.*

2. "*The pressure on the centre of a plane surface perpendicular to the stream and wholly immersed in it, is ⅔ of the weight of a column having the height necessary for communicating the velocity. For 33 i ½ of 21¼.*"

73 Experiments by which it is confirmed.

He attempted to ascertain the medium pressure on the whole surface, by opening 625 holes dispersed all over it. With the same velocity of current, he found the height in the tube to be 29 lines, or 7¼ more than the height necessary for producing the velocity. But he justly concluded this to be too great a measure, because the holes were ½ of an inch from the edge: had there been holes at the very edge, they would have sustained a non-pression, which would have diminished the height in the tube very considerably. He exposed to the same stream a conical tunnel, which raised the water to 34 lines. But this could not be considered as a measure of the pressure on a plane solid surface; for the central water was undoubtedly scooped out, as it were, and the filaments much more deflected than they would have been by a plane surface. Perhaps something of this happened even in every small hole in the former experiments. And this suggests some doubt as to the accuracy of the measurement of the pressure and of the velocity of a current by Mr Pitot's tube. It surely renders some corrections absolutely necessary. It is a fact, that when exposed to a vein of fluid coming through a short passage, the water in the tube stands on a level with that in the reservoir. Now we know that the velocity of this stream *does not* exceed what would be produced by a fall equal to $\frac{25}{32}$ of the head of water in the reservoir. Mr Buat made many valuable observations and improvements on this most useful instrument, which will be taken notice of in the articles RIVERS and *Water Works*.

Mr Buat by a scrupulous attention to all the circumstances, concludes, that the medium of pressure on the whole surface is equal to $\frac{25,5}{21,5}$ of the weight of a column, having the surface for its base, and the productive fall for its height. But we think that there is an uncertainty in this conclusion; because the height of the water in the vertical tube was undoubtedly augmented by an hydrostatical pressure arising from the accumulation of water above the body which was exposed to the stream.

Since the pressures are as the squares of the velocities, or as the heights h which produce the velocities, we may express this pressure by the symbol $\frac{25,5}{21,5}h$, or $1{,}186h$, or $m\,h$, the value of m being 1,186. This exceeds considerably the result of the experiments of the French academy. In these it does not appear that m sensibly exceeds unity. Note, that in these experiments the body was moved through still water; here it is exposed to a stream. These are generally supposed to be equivalent, on the authority of the third law of motion, which makes every action depend on the relative motions. We shall by and by see some causes of difference.

74 The action on the hinder part of a body or ship equally important with that on the fore-part.

The writers on this subject seem to think their task completed when they have considered the action of the fluid on the anterior part of the body, or that part of it which is before the broadest section, and have paid little or no attention to the hinder part. Yet those who are most interested in the subject, the naval architects, seem convinced that it is of no less importance to attend to the form of the hinder part of a ship. And the universal practice of all nations has been to make the hinder part more acute than the fore part. This has undoubtedly been deduced from experience; for it is in direct opposition to any notions which a person would naturally form on this subject. Mr Buat therefore thought it very necessary to examine the action of the water on the hinder part of a body by the same method. And, previous to this examination, in order to acquire some scientific notions of the subject, he made the following very curious and instructive experiment.

75 Experiment on this subject by Buat, Plate ccccxxxvi.

Two little conical pipes AB (fig. 22.) were inserted into the upright side of a prismatic vessel. They were an inch long, and their diameters at the inner and outer ends were five and four lines. A was 57 lines under the surface, and B was 73. A glass syphon was made of the shape represented in the figure, and its internal diameter was 1¼ lines. It was placed with its mouth in the axis, and even with the base of the conical pipe. The pipes being shut, the vessel was filled with water, and it was made to stand on a level in the two legs of the syphon, the upper part being full of air. When this syphon was applied to the pipe A, and the water running freely, it rose 32 lines in the short leg, and sunk as much in the other. When it was applied to the pipe B, the water rose 41 lines in the one leg of the syphon, and sunk as much in the other.

76 And his reasoning upon it.

He reasons in this manner from the experiment. The ring comprehended between the end of the syphon and the sides of the conical tube being the narrowest part of the orifice, the water issued with the velocity corresponding to the height of the water in the vessel above the orifice, diminished for the contraction. If therefore the cylinder of water immediately before the mouth of the syphon issued with the same velocity, the tube would be emptied through a height equal to this HEAD OF WATER *(charge)*. If, on the contrary, this cylinder of water, immediately before mouth of the syphon, were stagnant, the water in it would exert its full pressure on the mouth of the syphon, and the water in the syphon would be level with the water in the vessel. Between these extremes we must find the real state of the case, and we must measure the force of non-pression by the rise of the water in the syphon.

We see that in both experiments it bears an accurate pro-

Reſiſtance. proportion to the depth under the ſurface. For 57 : 73=32 : 41 very nearly. He therefore eſtimates the non-preſſure to be $\frac{56}{100}$ of the height of the water above the orifice.

77 Seemingly inaccurate. We are diſpoſed to think that the ingenious author has not reaſoned accurately from the experiment. In the firſt place, the force indicated by the experiment, whatever be its origin, is certainly double of what he ſuppoſes ; for it muſt be meaſured by the ſum of the riſe of the water in one leg, and its depreſſion in the other, the weight of the air in the bend of the ſyphon being neglected. It is preciſely analogous to the force acting on the water oſcillating in a ſyphon, which is acknowledged to be the ſum of the elevation and depreſſion. The force indicated by the experiment therefore is $\frac{112}{100}$ of the height of the water above the orifice. The force exhibited in this experiment bears a ſtill greater proportion to the productive height ; for it is certain that the water *did not* iſſue with the velocity acquired by the fall from the ſurface, and probably did not exceed $\frac{3}{4}$ of it. The effect of contraction muſt have been conſiderable and uncertain. The velocity ſhould have been meaſured both by the amplitude of the jet and by the quantity of water diſcharged. In the next place, we apprehend that much of the effect is produced by the tenacity of the water, which drags along with it the water which would have ſlowly iſſued from the ſyphon, and the other end not dipped into the water of the veſſel. We know, that if the horizontal part of the ſyphon had been continued far enough, and if no retardation were occaſioned by friction, the column of water in the upright leg would have accelerated like any heavy body ; and when the laſt of it had arrived at the bottom of that leg, the whole in the horizontal part would be moving with the velocity acquired by falling from the ſurface. The water of the veſſel which iſſues through the ſurrounding ring very quickly acquires a much greater velocity than what the water deſcending in the ſyphon would acquire in the ſame time, and it drags this laſt water along with it both by tenacity and friction, and it drags it out till its action is is oppoſed by want of equilibrium produced in the ſyphon, by the elevation in the one leg and the depreſſion in the other. We imagine that little can be concluded from the experiment with reſpect to the real non-preſſure. Nay, if the ſides of the ſyphon be ſuppoſed infinitely thin, ſo that there would be no curvature of the filaments of the ſurrounding water at the mouth of the ſyphon, we do not very diſtinctly ſee any ſource of non-preſſure : For we are not altogether ſatisfied with the proof which Mr Buat offers for this meaſure of the preſſure of a ſtream of fluid gliding along a ſurface, *and obſtructed by friction or any other cauſe*. We imagine that the paſſing water in the preſent experiment would be a little retarded by accelerating continually the water deſcending in the ſyphon, and renewed a-top, ſuppoſing the upper end open ; becauſe this water would not of itſelf acquire more than half this velocity. It however drags it out, till it not only reſiſts with a force equal to the weight of the whole vertical column, but even exceeds it by $\frac{12}{100}$. This it is able to do, becauſe the whole preſſure by which the water iſſues from an orifice has been ſhown (by Daniel Bernoulli) to be equal to twice this weight. We therefore conſider this beautiful experiment as chiefly valuable, by giving us a meaſure of the tenacity of the water; and we wiſh that it were repeated in a variety of depths, in order to diſcover what relation the force exerted bears to the depth. It would ſeem that the tenacity, being a certain determinate thing, the proportion of 100 to 112 would not be conſtant ; and that the obſerved ratio would be made up of two parts, one of them conſtant, and the other proportional to the depth under the ſurface. Reſiſtance.

But ſtill this experiment is intimately connected with the matter in hand ; and this apparent non-preſſure on the hinder part of a body expoſed to a ſtream, from whatever cauſes it proceeds, does operate in the action of water on this hinder part, and muſt be taken into the account.

78 Further diſcuſſions of De Buat. We muſt therefore follow the Chevalier de Buat in his diſcuſſions on this ſubject. A priſmatic body, having its prow and poop equal and parallel ſurfaces, and plunged horizontally into a fluid, will require a force to keep it firm in the direction of its axis preciſely equal to the difference between the real preſſures exerted on its prow and poop. If the fluid is at reſt, this difference will be nothing, becauſe the oppoſite dead preſſures of the fluid will be equal : but in a ſtream, there is ſuperadded to the dead preſſure on the prow the active preſſure ariſing from the deflections of the filaments of this fluid.

If the dead preſſure on the poop remained in its full intenſity by the perfect ſtagnation of the water behind it, the whole ſenſible preſſure on the body would be the active preſſure only on the prow, repreſented by $m\,b$. If, on the other hand, we could ſuppoſe that the water behind the body moved continually away from it (being renewed laterally) with the velocity of the ſtream, the dead preſſure would be entirely removed from its poop, and the whole ſenſible preſſure, or what muſt be oppoſed by ſome external force, would be $m\,b + b$. Neither of theſe can happen ; and the real ſtate of the caſe muſt be between theſe extremes.

79 Experiments. The following experiments were tried : The perforated box with its vertical tube was expoſed to the ſtream, the braſs plate being turned down the ſtream. The velocity was again 36 inches per ſecond.

The central hole A alone being opened, gave a non-preſſure of	13 lines.
A hole B, $\frac{5}{6}$ of an inch from the edge, gave	15
A hole C, near the ſurface	15,7
A hole D, at the lower angle	15,3

Here it appears that there is a very conſiderable non-preſſure, increaſing from the centre to the border. This increaſe undoubtedly proceeds from the greater lateral velocity with which the water is gliding in from the ſides. The water behind was by no means ſtagnant, although moving off with a much ſmaller velocity than that of the paſſing ſtream, and it was viſibly removed from the ſides, and gradually licked away at its further extremity.

Another box, having a great number of holes, all open, indicated a medium of non-preſſure equal to $13,\frac{1}{5}$ lines.

Another of larger dimenſions, but having fewer holes, indicated a non-preſſure of $12\frac{1}{8}$.

But the moſt remarkable, and the moſt important phenomena, were the following :

The firſt box was fixed to the ſide of another box, ſo

Resistance.

so that, when all was made smooth, it made a perfect cube, of which the perforated brass plate made the poop.

The apparatus being now exposed to the stream, with the perforated plate looking down the stream,

The hole A indicated a non-pression	-	= 7,2
B	- - -	8
C	- - -	6

Here was a great diminution of the non-pressions produced by the distance between the prow and the poop.

This box was then fitted in the same manner, so as to make the poop of a box three feet long. In this situation the non-pressures were as follow:

Hole A	- - -	1,5
B	- -	3,2

The non-pressions were still farther diminished by this increase of length.

The box was then exposed with all the holes open, in three different situations:

1st, Single, giving a non-pressure	-	13,1
2d, Making the poop of a cube	-	5,3
3d, Making the poop of a box three feet long		3,0

Another larger box:

1st, Single	- - -	12,2
2d, Poop of a cube	- -	5,
3d, Poop of the long box	- -	3,2

80 Great utility of [illegible]

These are most valuable experiments. They plainly show how important it is to consider the action on the hinder part of the body. For the whole impulse or resistance, which must be withstood or overcome by the external force, is the sum of the active pressure on the fore-part, and of the non-pressure on the hinder part; and they show that this does not depend solely on the form of the prow and poop, but also, and perhaps chiefly, on the length of the body. We see that the non-pressure on the hinder-part was prodigiously diminished (reduced to one-fourth) by making the length of the body triple of the breadth. And hence it appears, that merely lengthening a ship, without making any change in the form either of her prow on her poop, will greatly diminish the resistance to her motion through the water; and this increase of length may be made by continuing the form of the midship frame in several timbers along the keel, by which the capacity of the ship, and her power of carrying sail, will be greatly increased, and her other qualities improved, while her speed is augmented.

81 Physical cause of it explained.

It is surely of importance to consider a little the physical cause of this change. The motions are extremely complicated, and we must be contented if we can but perceive a few leading circumstances.

The water is turned aside by the anterior part of the body, and the velocity of the filaments is increased, and they acquire a divergent motion, by which they also push aside the surrounding water. On each side of the body, therefore, they are moving in a divergent direction, and with an increased velocity. But as they are on all sides pressed by the fluid without them, their motions gradually approach to parallelism, and their velocities to an equality with the stream. The progressive velocity, or that in the direction of the stream, is checked, at least at first. But since we observe the filaments constipated round the body, and that they are not deflected at right angles to their former direction, it is plain that the real velocity of a filament in its oblique path is augmented. We always observe, that a stone lying in the sand, and exposed to the wash of the sea, is laid bare at the bottom, and the sand is generally washed away to some distance all round. This is owing to the increased velocity of the water which comes into contact with the stone. It takes up more sand than it can keep floating, and it deposits it at a little distance all around, forming a little bank, which surrounds the stone at a small distance. When the filaments of water have passed the body, they are pressed by the ambient fluid into the place which it has quitted, and they glide round its stern, and fill up the space behind. The more divergent and the more rapid they are, when about to fall in behind, the more of the circumambient pressure must be employed to turn them into the trough behind the body, and less of it will remain to press them to the body itself. The extreme of this must obtain when the stream is obstructed by a thin plane only. But when there is some distance between the prow and the poop, the divergency of the filaments which had been turned aside by the prow, is diminished by the time that they have come abreast of the stern, and should turn in behind it. They are therefore more readily made to converge behind the body, and a more considerable part of the surrounding pressure remains unexpended, and therefore presses the water against the stern; and it is evident that this advantage must be so much the greater as the body is longer. But the advantage will soon be susceptible of no very considerable increase: for the lateral and divergent, and accelerated filaments, will soon become so nearly parallel and equally rapid with the rest of the stream, that a great increase of length will not make any considerable change in these particulars; and it must be accompanied with an increase of friction.

These are very obvious reflections. And if we attend minutely to the way in which the almost stagnant fluid behind the body is expended and renewed, we shall see all these effects confirmed and augmented. But as we cannot say any thing on this subject that is precise, or that can be made the subject of computation, it is needless to enter into a more minute discussion. The diminution of the non-pressure towards the centre most probably arises from the smaller force which is necessary to be expended in the inflection of the lateral filaments, already inflected in some degree, and having their velocity diminished. But it is a subject highly deserving the attention of the mathematicians; and we presume to invite them to the study of the motions of these lateral filaments, passing the body, and pressed into its wake by forces which are susceptible of no difficult investigation. It seems highly probable that if a prismatic box, with a square stern, were fitted with an addition precisely shaped like the water which would (abstracting tenacity and friction) have been stagnant behind it, the quantity of non-pression would be the smallest possible. The mathematician would surely discover circumstances which would furnish some maxims of construction for the hinder part as well as for the prow. And as his speculations on this last have not been wholly fruitless, we may expect advantages from his attention to this part, so much neglected.

82 Buat's deductions from his experiments.

In the mean time, let us attend to the deductions which Mr de Buat has made from his few experiments. When

Reſiſtance. When the velocity is three feet per ſecond, requiring the productive height 21,5 lines, the heights corresponding to the non-preſſure on the poop of a thin plane is 14,41 lines (taking in ſeveral circumſtances of judicious correction, which we have not mentioned), that of a foot cube is 5,83, and that of a box of triple length is 3,31.

Let q expreſs the variable ratio of theſe to the height producing the velocity, ſo that $q\,h$ may expreſs the non-preſſure in every caſe; we have,

For a thin plane - - -	$q = 0{,}67$
a cube - - -	0,271
a box = 3 cubes - -	0,153

It is evident that the value of q has a dependence on the proportion of the length, and the tranſverſe ſection of the body. A ſeries of experiments on priſmatic bodies ſhowed Mr de Buat that the deviation of the filaments was ſimilar in ſimilar bodies, and that this obtained even in diſſimilar priſms, when the lengths were as the ſquare-roots of the tranſverſe ſections. Although therefore the experiments were not ſufficiently numerous for deducing the preciſe law, it ſeemed not impoſſible to derive from them a very uſeful approximation. By a dexterous compariſon he found, that if l expreſſes the length of the priſm, and s the area of the tranſverſe ſection, and L expreſſes the common logarithm of the quantity to which it is prefixed, we ſhall expreſs the non-preſſure pretty accurately by the formula $\frac{1}{q} = \mathrm{L}\left(_{1,42}\,\frac{l}{\sqrt{s}}\right)$.

Hence ariſes an important remark, that when the height correſponding to the non-preſſion is greater than $\sqrt{s}$, and the body is little immerſed in the fluid, there will be a void behind it. Thus a ſurface of a ſquare inch, juſt immerſed in a current of three feet per ſecond, will have a void behind it. A foot ſquare will be in a ſimilar condition when the velocity is 12 feet.

We muſt be careful to diſtinguiſh this non-preſſure from the other cauſes of reſiſtance, which are always neceſſarily combined with it. It is ſuperadditive to the active impreſſion on the prow, to the ſtatical preſſure of the accumulation a-head of the body, the ſtatical preſſure ariſing from the depreſſion behind it, the effects of friction, and the effects of tenacity. It is indeed next to impoſſible to eſtimate them ſeparately, and many of them are actually combined in the meaſures now given. Nothing can determine the pure non-preſſures till we can aſcertain the motions of the filaments.

83 He controverts a maxim univerſally adopted,

Mr de Buat here takes occaſion to controvert the univerſally adopted maxim, that the preſſure occaſioned by a ſtream of fluid on a fixed body is the ſame with that on a body moving with equal velocity in a quieſcent fluid. He repeated all theſe experiments with the perforated box in ſtill water. The general diſtinction was, that both the preſſures and the non preſſure in this caſe was leſs, and that the odds was chiefly to be obſerved near the edges of the ſurface. The general factor of the preſſure of a ſtream on the anterior ſurface was $m = 1{,}186$; but that on a body moving through a ſtill fluid is only $m = 1$. He obſerved no non-preſſure even at the very edge of the prow, but even a ſenſible preſſure. The preſſure, therefore, or reſiſtance, is more equably diffuſed over the ſurface of the prow than the impulſe is.—He alſo found that the reſiſtance diminiſhed in a leſs ratio than the ſquares of the velocities, eſpecially in ſmall velocities.

The non-preſſures increaſed in a greater ratio than the ſquares of the velocities. The ratio of the velocities to a ſmall velocity of $2\frac{1}{2}$ inches *per* ſecond increaſed geometrically, the value of q increaſed arithmetically; and we may determine q for any velocity V by this proportion $\mathrm{L}\,\frac{55}{2,2} : \mathrm{L}\,\frac{V}{22} = 0{,}5 : q$, and $q = \frac{\mathrm{L}\,\frac{V}{2,2}}{2,8}$. That is, let the common logarithm of the velocity, divided by $2\frac{1}{2}$, be conſidered as a common number; divide this common number by $2\frac{8}{10}$, the quotient is q, which muſt be multiplied by the productive height. The product is the preſſure. Reſiſtance.

When Pitot's tube was expoſed to the ſtream, we had $m = 1$; but when it is carried through ſtill water, m is $= 1{,}22$. When it was turned from the ſtream, we had $q = 0{,}157$; but when carried through ſtill water, q is $= 0{,}138$. A remarkable experiment.

84 And ſupports his opinion by a remarkable experiment.

When the tube was moved laterally through the water, ſo that the motion was in the direction of the plane of its mouth, the non-preſſure was $= 1$. This is one of his chief arguments for his theory of non-preſſion. He does not give the detail of the experiment, and only inſerts the reſult in his table.

As a body expoſed to a ſtream deflects the fluid, heaps it up, and increaſes its velocity; ſo a body moved through a ſtill fluid turns it aſide, cauſes it to ſwell up before it, and gives it a real motion alongſide of it in the oppoſite direction. And as the body expoſed to a ſtream has a quantity of fluid almoſt ſtagnant both before and behind; ſo a body moved through a ſtill fluid carries before it and drags after it a quantity of fluid, which accompanies it with nearly an equal velocity. This addition to the quantity of matter in motion muſt make a diminution of its velocity; and this forms a very conſiderable part of the obſerved reſiſtance.

85 The objection not well founded.

We cannot, however, help remarking that it would require very diſtinct and ſtrong proof indeed to overturn the common opinion, which is founded on our moſt certain and ſimple conceptions of motion, and on a law of nature to which we have never obſerved an exception. Mr de Buat's experiments, tho' moſt judiciouſly contrived, and executed with ſcrupulous care, are by no means of this kind. They were, of abſolute neceſſity, very complicated; and many circumſtances, impoſſible to avoid or to appreciate, rendered the obſervation, or at leaſt the compariſon, of the velocities, very uncertain.

86 Remarks and experiments on the motion of bodies in running or ſtill water.

We can ſee but two circumſtances which do not admit of an eaſy or immediate compariſon in the two ſtates of the problem. When a body is expoſed to a ſtream *in our experiments*, in order to have an impulſe made on it, there is a force tending to move the body backwards, independent of the real impulſe or preſſure occaſioned by the deflection of the ſtream. We cannot have a ſtream except in conſequence of a ſloping ſurface. Suppoſe a body floating on this ſtream. It will not only fall down *along with the ſtream*, but it will fall *down the ſtream*, and will therefore go faſter along the canal than the ſtream does: for it is floating on an inclined plane; and if we examine it by the laws of hydroſtatics, we ſhall find, that beſides its own tendency to *ſlide* down this inclined plane, there is an odds of hydroſtatical preſſure, which *puſhes* it down this plane. It will therefore go along the canal faſter than the ſtream. For this acceleration depends on the difference of preſſure at the two ends, and will be more remarkable

Reſiſtance. markable as the body is larger, and eſpecially as it is longer. This may be diſtinctly obſerved. All floating bodies go into the ſtream of the river, becauſe there they find the ſmalleſt obſtruction to the acquiſition of this motion along the inclined plane; and when a number of bodies are thus floating down the ſtream, the largeſt and longeſt outſtrip the reſt. A log of wood floating down in this manner may be obſerved to make its way very faſt among the chips and ſaw-duſt which float alongſide of it.

Now when, in the courſe of our experiments, a body is ſupported againſt the action of a ſtream, and the impulſe is meaſured by the force employed to ſupport it, it is plain that part of this force is employed to act againſt that tendency which the body has to outſtrip the ſtream. This does not appear in our experiment, when we move a body with the velocity of this ſtream through ſtill water having a horizontal ſurface.

The other diſtinguiſhing circumſtance is, that the retardations of a ſtream ariſing from friction are found to be nearly as the velocities. When, therefore, a ſtream moving in a limited canal is checked by a body put in its way, the diminution of velocity occaſioned by the friction of the ſtream having already produced its effect, the impulſe is not affected by it; but when the body puts the ſtill water in motion, the friction of the bottom produces ſome effect, by retarding the receſs of the water. This, however, muſt be next to nothing.

The chief difference will ariſe from its being almoſt impoſſible to make an exact compariſon of the velocities: for when a body is moved againſt the ſtream, the relative velocity is the ſame in all the filaments. But when we expoſe a body to a ſtream, the velocity of the different filaments is not the ſame; becauſe it decreaſes from the middle of the ſtream to the ſides.

87 Mr Buat's calculation of reſiſtance.

Mr Buat found the total ſenſible reſiſtance of a plate 12 inches ſquare, and meaſured, not by the height of water in the tube of the perforated box, but by weights acting on the arm of a balance, having its centre 15 inches under the ſurface of a ſtream moving three feet per ſecond, to be 19,46 pounds; that of a cube of the ſame dimenſions was 15,22; and that of a priſm three feet long was 13,87; that of a priſm ſix feet long was 14,27. The three firſt agree extremely well with the determination of m and q, by the experiments with the perforated box. The total reſiſtance of the laſt was undoubtedly much increaſed by friction, and by the retrograde force of ſo long a priſm floating in an inclined ſtream. This laſt by computation is 0,223 pounds; this added to $h\,(m+q)$, which is 13,59, gives 13,81, leaving 0,46 for the effect of friction.

If the ſame reſiſtances be computed on the ſuppoſition that the body moves in ſtill water, in which caſe we have $m = 1$, and q for a thin plate $= 0{,}433$; and if q be computed for the lengths of the other two bodies by the formula $\frac{1}{q} = \mathrm{L}\,1{,}42 + \frac{l}{\sqrt{s}}$; we ſhall get for the reſiſtances 14,94; 12,22; and 11,49.

88 And of the quantity of water adhering to a body moving in ſtill water, &c.

Hence Mr Buat concludes, that the reſiſtances in theſe two ſtates are nearly in the ratio of 13 to 10. This, he thinks, will account for the difference obſerved in the experiments of different authors.

Mr Buat next endeavours to aſcertain the quantity or water which is made to adhere in ſome degree to a body which is carried along thro' ſtill water, or which remains nearly ſtagnant in the midſt of a ſtream. He takes the ſum of the motions in the direction of the ſtream, viz. the ſum of the actual motions of all thoſe particles which have loſt part of their motion, and he divides this ſum by the general velocity of the ſtream. The quotient is equivalent to a certain quantity of water perfectly ſtagnant round the body. Without being able to determine this with preciſion, he obſerves, that it augments as the reſiſtance diminiſhes; for in the caſe of a longer body, the filaments are obſerved to converge to a greater diſtance behind the body. The ſtagnant maſs a-head of the body is more conſtant; for the deflection and reſiſtance at the prow are obſerved not to be affected by the length of the body. Mr Buat, by a very nice analyſis of many circumſtances, comes to this concluſion, that the whole quantity of fluid, which in this manner accompanies the ſolid body, remains the ſame whatever is the velocity. He might have deduced it at once, from the conſideration that the curves deſcribed by the filaments are the ſame in all velocities. Reſiſtance.

He then relates a number of experiments made to aſcertain the abſolute quantity thus made to accompany the body. Theſe were made by cauſing pendulums to oſcillate in fluids. Newton had determined the reſiſtances to ſuch oſcillation by the diminution of the arches of vibration. Mr Buat determines the quantity of dragged fluid by the increaſe of their duration; for this ſtagnation or dragging is in fact adding a quantity of matter to be moved, without any addition to the moving force. It was ingeniouſly obſerved by Newton, that the time of oſcillation was not ſenſibly affected by the reſiſtance of the fluid: a compenſation, almoſt complete, being made by the diminution of the arches of vibration; and experiment confirmed this. If, therefore, a great augmentation of the time of vibration be obſerved, it muſt be aſcribed to the additional quantity of matter which is thus dragged into motion, and it may be employed for its meaſurement. Thus, let a be the length of a pendulum ſwinging ſeconds in vacuo, and l the length of a ſecond's pendulum ſwinging in a fluid. Let p be the weight of the body in the fluid, and P the weight of the fluid diſplaced by it; $\mathrm{P}+p$ will expreſs its weight in vacuo, and $\frac{\mathrm{P}+p}{p}$ will be the ratio of theſe weights. We ſhall therefore have $\frac{\mathrm{P}+p}{p} = \frac{a}{l}$ and $l = \frac{ap}{\mathrm{P}+p}$.

Let $n\,\mathrm{P}$ expreſs the ſum of the fluid diſplaced, and the fluid dragged along, n being a number greater than unity, to be determined by experiment. The maſs in motion is no longer $\mathrm{P}+p$, but $\mathrm{P}+n\,\mathrm{P}$, while its weight in the fluid is ſtill p. Therefore we muſt have $l = \frac{ap}{n\mathrm{P}+p} = \frac{a}{\frac{n\mathrm{P}}{p}+1}$, and $n = \frac{p}{\mathrm{P}}\left(\frac{a}{l}-1\right)$.

A prodigious number of experiments made by Mr Buat on ſpheres vibrating in water gave values of n, which were very conſtant, namely, from 1,5 to 1,7; and by conſidering the circumſtances which accompanied the variations of n (which he found to ariſe chiefly from the curvature of the path deſcribed by the ball)

Reſiſtance. ball), he ſtates the mean value of the number n at 1,583. So that a ſphere in motion drags along with it about $\frac{6}{10}$ of its own bulk of fluid with a velocity equal to its own. Reſiſtance.

He made ſimilar experiments with priſms, pyramids, and other bodies, and found a complete confirmation of his aſſertion, that priſms of equal lengths and ſections, though diſſimilar, dragged equal quantities of fluid; that ſimilar priſms and priſms not ſimilar, but whoſe length were as the ſquare-root of their ſections, dragged quantities proportional to their bulks.

He found a general value of n for priſmatic bodies, which alone may be conſidered as a valuable truth; namely, that $n = 0{,}705 \frac{\sqrt{s}}{l} + 1{,}13$.

From all theſe circumſtances, we ſee an intimate connection between the preſſures, non-preſſures, and the fluid dragged along with the body. Indeed this is immediately deducible from the firſt principles; for what Mr Buat calls the *dragged fluid* is in fact a certain portion of the whole change of motion produced in the direction of the body's motion.

It was found, that with reſpect to thin planes, ſpheres, and pyramidal bodies of equal baſes, the reſiſtances were inverſely as the quantities of fluid dragged along.

The intelligent reader will readily obſerve, that theſe views of the Chevalier Buat are not ſo much diſcoveries of new principles as they are claſſifications of conſequences, which may all be deduced from the general principles employed by D'Alembert and other mathematicians. But they greatly aſſiſt us in forming notions of different parts of the procedure of nature in the mutual action of fluids and ſolids on each other. This muſt be very acceptable in a ſubject which it is by no means probable that we ſhall be able to inveſtigate with mathematical preciſion. We have given an account of theſe laſt obſervations, that we may omit nothing of conſequence that has been written on the ſubject; and we take this opportunity of recommending the *Hydraulique* of Mr Buat as a moſt ingenious work, containing more original, ingenious, and practically uſeful thoughts, than all the performances we have met with. His doctrine of *the principle of uniform motion of fluids in pipes and open canals*, will be of immenſe ſervice to all engineers, and enable them to determine with ſufficient preciſion the moſt important queſtions in their profeſſion; queſtions which at preſent they are hardly able to gueſs at. See Rivers and *Water-Works*.

89 Change of reſiſtance produced by the void behind a body

The only circumſtance which we have not noticed in detail, is the change of reſiſtance produced by the void, or tendency to a void, which obtains behind the body; and we omitted a particular diſcuſſion, merely becauſe we could ſay nothing ſufficiently preciſe on the ſubject. Perſons not accuſtomed to the diſcuſſions in the phyſico-mathematical ſciences, are apt to entertain doubts or falſe notions connected with this circumſtance, which we ſhall attempt to remove; and with this we ſhall conclude this long and unſatisfactory diſſertation.

90 Explained.

If a fluid were perfectly incompreſſible, and were contained in a veſſel incapable of extenſion, it is impoſſible that any void could be formed behind the body; and in this caſe it is not very eaſy to ſee how motion could be performed in it. A ſphere moved in ſuch a medium could not advance the ſmalleſt diſtance, unleſs *ſome* particles of the fluid, in filling up the ſpace left by it, moved with a velocity next to infinite. Some degree of compreſſibility, however ſmall, ſeems neceſſary. If this be inſenſible, it may be rigidly demonſtrated, that an external force of compreſſion will make no *ſenſible* change in the internal motions, or in the reſiſtances. This indeed is not obvious, but is an immediate conſequence of the *quaquaverſum* preſſure of fluids. As much as the preſſure is augmented by the external compreſſions on one ſide of a body, ſo much it is augmented on the other ſide; and the ſame muſt be ſaid of every particle. Nothing more is neceſſary for ſecuring the ſame motions by the ſame partial and internal forces; and this is fully verified by experiment. Water remains equally fluid under any compreſſions. In ſome of Sir Iſaac Newton's experiments balls of four inches diameter were made ſo light as to preponderate in water only three grains. Theſe balls deſcended in the ſame manner as they would have deſcended in a fluid where the reſiſtance was equal in every part; yet, when they were near the bottom of a veſſel nine feet deep, the compreſſion round them was at laſt 2400 times the moving force; whereas, when near the top of the veſſel, it was not above 50 or 60 times.

But on a fluid ſenſibly compreſſible, or which is not confined, a void may be left behind the body. Its motion may be ſo ſwift that the ſurrounding preſſure may not ſuffice for filling up the deſerted ſpace; and, in this caſe, a ſtatical preſſure will be added to the reſiſtance. This may be the caſe in a veſſel or pond of water having an open ſurface expoſed to the finite or limited preſſure of the atmoſphere. The queſtion now is, whether the reſiſtance will be increaſed by an increaſe of external preſſure? Suppoſing a ſphere moving near the ſurface of water, and another moving equally faſt at four times the depth. If the motion be ſo ſwift that a void is formed in both caſes, there is no doubt but that the ſphere which moves at the greateſt depth is moſt reſiſted by the preſſure of the water. If there is no void in either caſe, then, becauſe the quadruple depth would cauſe the water to flow in with only a double velocity, it would ſeem that the reſiſtance would be greater; and indeed the water flowing in laterally with a double velocity produces a quadruple non-preſſure.—But, on the other hand, the preſſure at a ſmall depth may be inſufficient for preventing a void, while that below effectually prevents it; and this was obſerved in ſome experiments of Chevalier de Borda. The effect, therefore, of greater immerſion, or of greater compreſſion, in an elaſtic fluid, does not follow a preciſe ratio of the preſſure, but depends partly on abſolute quantities. It cannot, therefore, be ſtated by any very ſimple formula what increaſe or diminution of reſiſtance will reſult from a greater depth; and it is chiefly on this account that experiments made with models of ſhips and mills are not concluſive with reſpect to the performance of a large machine of the ſame proportions, without corrections, ſometimes pretty intricate. We aſſert, however, with great confidence, that this is of all methods the moſt exact, and infinitely more certain than any thing that can be deduced from the moſt elaborate calculation from theory. If the reſiſtances at all depths be equal, the proportionality of the total reſiſtance to the body is exact, and perfectly conformable to obſervation. It is only in great velocities where the depth has any material influence, and the influence is not near ſo conſiderable as we ſhould, at firſt ſight, ſuppoſe; for, in eſtimating the effect of immerſion, which has a relation

Reſiſtance. to the difference of preſſure, we muſt always take in the preſſure of the atmoſphere; and thus the preſſure at 33 feet deep is not 33 times the preſſure at one foot deep, but only double, or twice as great. The atmoſpheric preſſure is omitted only when the reſiſted plane is at the very ſurface. D'Ulloa, in his *Examen Maritimum*, has introduced an equation expreſſing this relation; but, except with very limited conditions, it will miſlead us prodigiouſly. To give a general notion of its circumſtances, let AB (fig. 23.) be the ſection of a plane moving through a fluid in the direction CD, with a given velocity. The fluid will be heaped up before it above its natural level CD, becauſe the water will not be puſhed before it like a ſolid body, but will be puſhed aſide. And it cannot acquire a lateral motion any other way than by an accumulation, which will diffuſe itſelf in all directions by the law of undulatory motion. The water will alſo be left lower behind the plane, becauſe time *muſt* elapſe before the preſſure of the water behind can make it fill the ſpace. We may acquire ſome notion of the extent of both the accumulation and depreſſion in this way. There is a certain depth CF ($=\frac{v^2}{2s}$, where v is the velocity, and s the accelerating power of gravity) under the ſurface, ſuch that water would flow through a hole at F with the velocity of the plane's motion. Draw a horizontal line FG. The water will certainly touch the plane in G, and we may ſuppoſe that it touches it no higher up. Therefore there will be a hollow, ſuch as CGE. The elevation HE will be regulated by conſiderations nearly ſimilar. ED muſt be equal to the velocity of the plane, and HE muſt be its productive height. Thus, if the velocity of the plane be one foot *per* ſecond, HE and EG will be $\frac{1}{64}$ of an inch. This is ſufficient (though not exact) for giving us a notion of the thing. We ſee that from this muſt ariſe a preſſure in the direction DC, viz. the preſſure of the whole column HG.

Something of the ſame kind will happen although the plane AB be wholly immerged, and this even to ſome depth. We ſee ſuch alleviations in a ſwift running ſtream, where there are large ſtones at the bottom.—This occaſions an exceſs of preſſure in the direction oppoſite to the plane's motion; and we ſee that there muſt, in every caſe, be a relation between the velocity and this exceſs of preſſure. This D'Ulloa expreſſes by an equation. But it is very exceptionable, not taking properly into the account the comparative facility with which the water can heap up and diffuſe itſelf. It muſt always heap up till it acquires a ſufficient head of water to produce a lateral and progreſſive diffuſion ſufficient for the purpoſe. It is evident, that a ſmaller elevation will ſuffice when the body is more immerſed, becauſe the check or impulſe given by the body below is propagated, not vertically only, but in every direction; and therefore the elevation is not confined to that part of the ſurface which is immediately above the moving body, but extends ſo much farther laterally as the centre of agitation is deeper: Thus, the elevation neceſſary for the paſſage of the body is ſo much ſmaller; and it is the *height* only of this accumulation or wave which determines the backward preſſure on the body. D'Ulloa's equation may happen to quadrate with two experiments at different depths, without being nearly juſt; for *any* two points may be in a curve, without exhibiting its equation. Three points will do it with ſome approach to preciſion; but four, at leaſt, are neceſſary for giving any notion of its nature. D'Ulloa has only given two experiments, which we mentioned in another place. Reſiſtance.

We may here obſerve, that it is this circumſtance which immediately produces the great reſiſtance to the motion of a body through a fluid in a narrow canal.—The fluid cannot paſs the body, unleſs the area of the ſection be ſufficiently extenſive. A narrow canal prevents the extenſion ſidewiſe. The water muſt therefore heap up, till the ſection and velocity of diffuſion are ſufficiently enlarged, and thus a great backward preſſure is produced. (See the ſecond ſeries of Experiments by the French Academicians; ſee alſo Franklin's Eſſays.) It is important, and will be conſidered in another place.

Thus have we attempted to give our readers ſome account of one of the moſt intereſting problems in the whole of mechanical philoſophy. We are ſorry that ſo little advantage can be derived from the united efforts of the firſt mathematicians of Europe, and that there is ſo little hope of greatly improving our ſcientific knowledge of the ſubject. What we have delivered will, however, enable our readers to peruſe the writings of thoſe who have applied the theories to practical purpoſes. Such, for inſtance, are the treatiſes of John Bernoulli, of Bouguer, and of Euler, on the conſtruction and working of ſhips, and the occaſional diſſertations of different authors on water-mills. In this laſt application the ordinary theory is not without its value, for the impulſes are nearly perpendicular; in which caſe they do not materially deviate from the duplicate proportion of the ſine of incidence. But even here this theory, applied as it commonly is, miſleads us exceedingly. The impulſe on one float may be accurately enough ſtated by it; but the authors have not been attentive to the motion of the water after it has made its impulſe; and the impulſe on the next float is ſtated the ſame as if the parallel filaments of water, which were not ſtopped by the preceding float, did impinge on the oppoſite part of the ſecond, in the ſame manner, and with the ſame obliquity and energy, as if it were detached from the reſt. But this does not in the leaſt reſemble the real proceſs of nature. 91 Impulſe of water on water mills.

Suppoſe the floats B, C, D, H (fig. 24.) of a wheel immerſed in a ſtream whoſe ſurface moves in the direction AK, and that this ſurface meets the float B in E. The part BE alone is ſuppoſed to be impelled; whereas the water, checked by the float, heaps up on it to *e*.—Then drawing the horizontal line BF, the part CF of the next float is ſuppoſed to be all that is impelled by the parallel filaments of the ſtream; whereas the water bends round the lower edge of the float B by the ſurrounding preſſure, and riſes on the float *c* all the way to *f*. In like manner, the float D, inſtead of receiving an impulſe on the very ſmall portion DG, is impelled all the way from D to *g*, not much below the ſurface of the ſtream. The ſurfaces impelled at once, therefore, greatly exceed what this ſlovenly application of the theory ſuppoſes, and the whole impulſe is much greater; but this is a fault in the application, and not in the theory. It will not be a very difficult thing to acquire a knowledge of the motion of the water which has paſſed the preceding float, which, though not accurate, will yet approximate conſiderably to the truth; and then

Fig. 1. N°1.

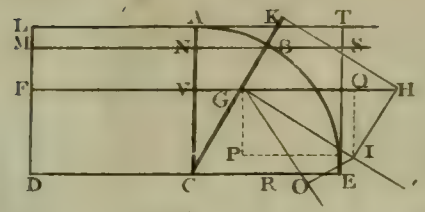


Fig. 1. N°2.

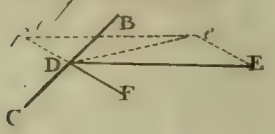


Fig. 4.

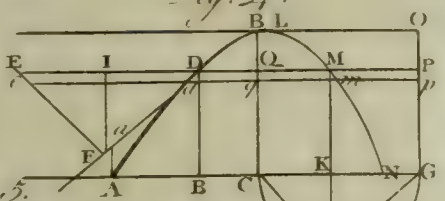
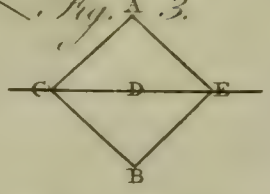


Fig. 3.



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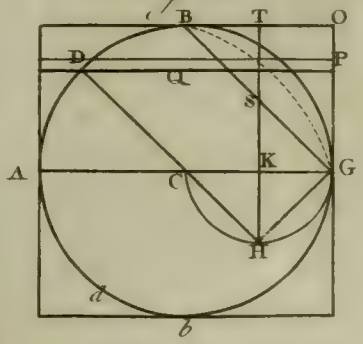

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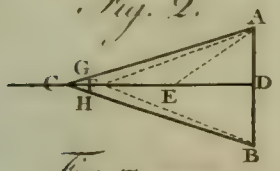

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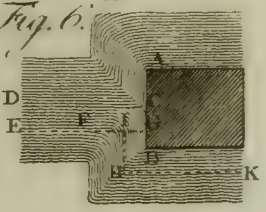


Fig. 7.

Fig. 8.

Fig. 12.

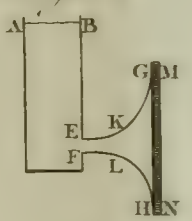
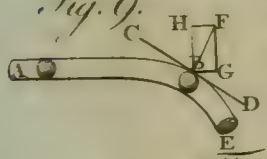


Fig. 9.



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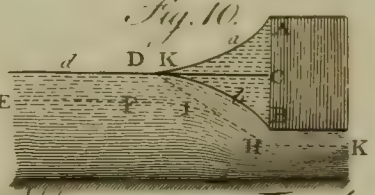


Fig. 11.

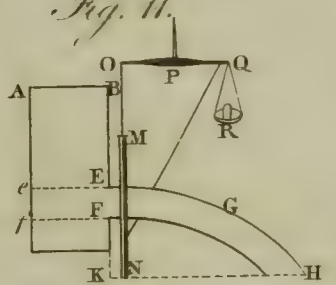
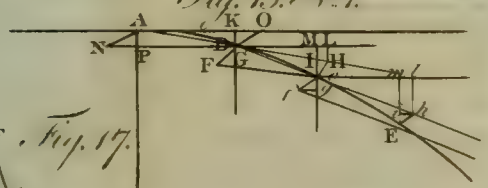


Fig. 13. N°1.



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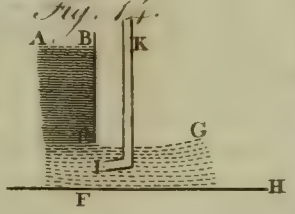

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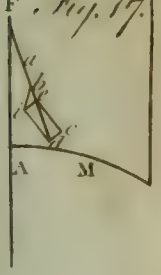
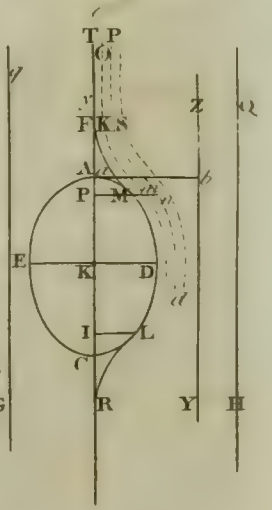


Fig. 16.



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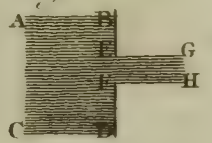


Fig. 13. N°2.

Fig. 22.

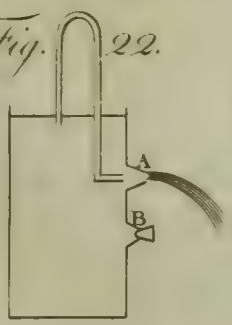


Fig. 20.

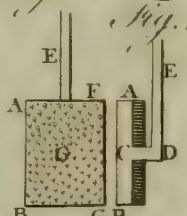
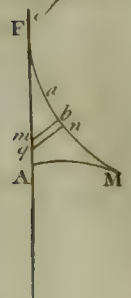


Fig. 21.

Fig. 18.



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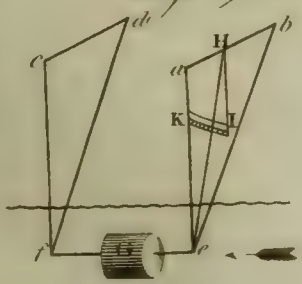

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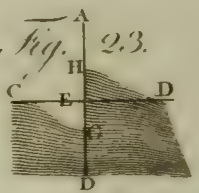

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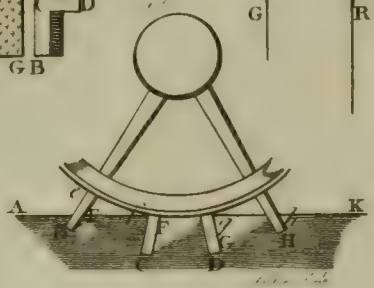

Resolution || Respiration.

then the ordinary theory will furnish maxims of construction which will be very serviceable. This will be attempted in its proper place; and we shall endeavour, in our treatment of all the practical questions, to derive useful information from all that has been delivered on the present occasion.

RESOLUTION *of* Ideas. See Logic, Part I. ch. 3.

Resolution, in music. To *resolve* a discord or dissonance, says Rousseau, is to carry it according to rule into a consonance in the subsequent chord. There is for that purpose a procedure prescribed, both for the fundamental bass of the dissonant chord, and for the part by which the dissonance is formed.

There is no possible manner of resolving a dissonance which is not derived from an operation of cadence: it is then by the kind of cadence which we wish to form, that the motion of the fundamental bass is determined, (see Cadence). With respect to the part by which the dissonance is formed, it ought neither to continue in its place, nor to move by disjointed gradations; but to rise or descend diatonically, according to the nature of the dissonance. Theorists say, that major dissonances ought to rise, and minor to descend; which is not however without exception, since in particular chords of harmony, a seventh, although major, ought not to rise, but to descend, unless in that chord which is, very incorrectly, called *the chord of the seventh redundant*. It is better then to say, that the seventh and all its derivative dissonances ought to descend; and that the sixth superadded, and all its derivative dissonances, should rise. This is a rule truly general, and without any exception. It is the same case with the rule of resolving dissonances. There are some dissonances which cannot be prepared; but there is by no means one which ought not to be resolved.

With respect to the sensible note, improperly called a *major dissonance*, if it ought to ascend, this is less on account of the rule for resolving dissonances, than on account of that which prescribes a diatonic procedure, and prefers the shortest road; and in reality, there are cases, as that of the interrupted cadence, in which this sensible note does not ascend.

In chords by supposition, one single chord often produces two dissonances; as the seventh and ninth, the ninth and fourth, &c. Then these two dissonances ought to have been prepared, and both must likewise be resolved; it is because regard should be paid to every thing which is discordant, not only in the fundamental, but even in the continued bass.

Resolution, in chemistry, the reduction of a mixed body into its component parts or first principles, as far as can be done by a proper analysis.

Resolution, in medicine, the disappearing of any tumor without coming to suppuration or forming an abscess.

RESOLVENTS, in medicine, such as are proper for dissipating tumors, without allowing them to come to suppuration.

RESONANCE, Resounding, in music, &c. a sound returned by the air inclosed in the bodies of stringed instruments, such as lutes, &c. or even in the bodies of wind-instruments, as flutes, &c.

RESPIRATION, the act of respiring or breathing the air. See Anatomy, n° 118. Blood, n° 29. Medicine, n° 104. Physiology, Sect. I. and Putrefaction *passim*.

Respiration

Respiration of Fishes. See Ichthyology, n° 7, 8, 9.

RESPITE, in law, signifies a delay, forbearance, or prolongation of time, granted to any one for the payment of a debt, or the like. See Reprieve.

Restive.

RESPONDENT, in the schools, one who maintains a thesis in any art or science; who is thus called from his being to answer all the objections proposed by the opponent.

RESPONDENTIA. See Bottomry.

RESPONSE, an answer or reply. A word chiefly used in speaking of the answers made by the people to the priest, in the litany, the psalms, &c.

RESSORT, a French word, sometimes used by English authors to signify the jurisdiction of a court, and particularly one from which there is no appeal.—Thus it is said, that the British house of lords judge *en dernier ressort*, or in the last ressort.

REST, the continuance of a body in the same place, or its continual application or contiguity to the same parts of the ambient or contiguous bodies; and therefore is opposed to motion. See the article Motion.

Rest, in poetry, is a short pause of the voice in reading, being the same with the cæsura, which, in Alexandrine verses, falls on the sixth syllable; but in verses of 10 or 11 syllables, on the fourth. See Poetry, Part III.

REST-HARROW, or Cammock, the *Ononis Arvensis*. A decoction of this plant has been much recommended to horses labouring under a stoppage of urine. It is the pest of some corn-fields; but in its younger state, before the plant has acquired its thorns, it is a most acceptable food to sheep.

RESTAURATION, the act of re-establishing or setting a thing or person in its former good state.

RESTIO, in botany; a genus of the triandria order, belonging to the dioecia class of plants. The male calyx is an ovate spike of membranaceous scales; the corolla is proper, hexapetalous, and persistent. The female calyx and corolla are as in the male; the germen is roundish, and sex-sulcated; there are three erect and persistent styles; the capsule is roundish, with six plaits, and is rostrated and trilocular; the seeds are oblong and cylindrical.

RESTITUTION, in a moral and legal sense, is restoring a person to his right, or returning something unjustly taken or detained from him.

Restitution of Medals, or *Restituted Medals*, is a term used by antiquaries for such medals as were struck by the emperors, to retrieve the memory of their predecessors.

Hence, in several medals, we find the letters rest. This practice was first begun by Claudius, by his striking afresh several medals of Augustus. Nero did the same; and Titus, after his father's example, struck restitutions of most of his predecessors. Gallienus struck a general restitution of all the preceding emperors on two medals; the one bearing an altar, the other an eagle, without the rest.

RESTIVE, or Resty, in the manege, a stubborn, unruly, ill broken horse, that stops, or runs back, instead of advancing forward.

RESTO-

Restoration.

RESTORATION, the f me with reftaurat n. See Restitution.

In England, the return of King Charles II. in 1660, is known by the name of the *Reftoration*; and the 29th of May is kept as an anniverfary feftival, in commemoration of that event, by which the regal and epifcopal government was reftored.

RESTORATIVE, in medicine, a remedy proper for reftoring and retrieving the ftrength and vigour both of the body and animal fpirits.

All under this clafs, fays Quincy, are rather nutrimental than medicinal; and are more adminiftered to repair the wafte of the conftitution, than to alter and recure its diforders.

RESTRICTION, among logicians, is limiting a term, fo as to make it fignify lefs than it uſually does.

RESTRINGENT, in medicine, the fame with aſtringent. See Astringents.

RESULT, what is gathered from a conference, inquiry, meditation, or the like; or the conclufion and effect thereof.

1 Definition.

RESURRECTION, in theology, is a rifing again from the ſtate of the dead; and is that event, the belief of which conſtitutes one of the principal articles in the Chriſtian creed.

2 Plan of the article.

In treating of this object of our faith, it has been uſual to mention, firſt, the reſurrection of our Bleſſed Lord, with the character of the witneſſes, and the authenticity of the goſpel hiſtory by which it has been proved, and from which, as a conſequence, ours is inferred. But as moſt of the arguments for his reſurrection are contained in the goſpels, and as merely to repeat them would afford, we hope, but little information to moſt of our readers, we mean here to take a view of the ſeveral grounds on which the belief of a future exiſtence is ſuppoſed to be founded; to collect together ſome of the ſentiments of authors and nations concerning the place where departed ſpirits reſide; concerning the nature of their preſent ſtate; concerning the kinds of their future deſtination; that we may afterwards ſee how far their notions differ and agree with what we conſider as the doctrines of Scripture.

3 The notion of a future ſtate unknown to ſome obſcure tribes.

Of a future ſtate, there have ſometimes been found a few wandering and obſcure tribes who ſeemed to entertain no notion at all; though it ſhould be remarked, that ſome of theſe were likewiſe obſerved in ſo low a degree of ſavage barbarity as not to be acquainted with the uſe of the bow, the dart, or the ſling, and as not knowing how to wield a club, or to throw a ſtone, as a weapon of defence*.

* See Robertſon's Hiſt. of America.

4 Has been almoſt univerſal.

Wherever the human mind has been cultivated, or properly ſpeaking, begun to be cultivated, the opinion has likewiſe generally prevailed that human exiſtence is not confined to the preſent ſcene; nay, ſo very general has this notion been found among mankind, that many are puzzled how to account for what they ſuppoſe to be almoſt next to its univerſality.

5 The origin of this notion derived by ſome from primeval revelation.

To explain the phenomenon, ſome have imagined that it is a notion derived by tradition from primeval revelation. They ſuppoſe that the firſt parent of mankind, as a moral agent accountable for his conduct, was informed by his Maker of every thing which it was of importance for him to know; that he muſt have been acquainted with this doctrine of a future ſtate in particular; and that he could hardly fail to communicate a matter ſo intereſting to his poſterity. They ſuppoſe, too, that the hiſtory of the tranſlation of Enoch muſt have made a great noiſe in the world, and that the remembrance of it muſt have been long retained and widely diffuſed; and they find in the book of Job plain intimations of a reſurrection from the dead, which, from the manner in which they are introduced, they think that very ancient patriarch muſt have received through this channel. Reſurrection.

6 The uſual objections to this opinion of no force.

It is not thought to be any objection to theſe ſuppoſitions, that the Moſt High, when delivering his laws from the top of Mount Sinai, did not enforce them by the awful ſanctions of a future ſtate. The intelligent reader of the Scriptures knows that the ſanctions of a future ſtate belong to a different and more univerſal diſpenſation than was that of Moſes; that the primeval revelation related to that diſpenſation; and that the Jewiſh law, with its temporal ſanctions, was introduced only to preſerve the knowledge and worſhip of the true God among a people too groſs in their conceptions to have been properly influenced by the view of future rewards and puniſhments, of ſuch a nature as eye hath not ſeen, nor ear heard, neither hath it entered into the heart of man to conceive. He ſees at the ſame time, everywhere ſcattered through the Old Teſtament, plain indications of the Moſaic economy, being no more than preparatory to the bringing in of a better hope; and he thinks it evident, that ſuch Jews as underſtood any thing of the nature of that better hope, muſt have been convinced, that, however the *ceremonial rites* of *their* religion might be ſufficiently guarded by temporal ſanctions, the *fundamental principles* of *all* religion and virtue are ſupported by rewards and puniſhments to be diſpenſed in a ſtate beyond the grave. See Prophecy and Theology.

7 Reaſons in ſupport of the opinion.

That the progenitors of the human race muſt have been inſpired by their Creator with the knowledge of their immortality, and of every thing neceſſary to their everlaſting welfare, cannot, we ſhould think, be queſtioned by any one who believes that the world had a beginning, and that it is under the government of goodneſs and juſtice. The progreſs from ſenſe to ſcience is ſo ſlow, that however capable we may ſuppoſe the earlieſt inhabitants of this earth to have been of making philoſophical diſcoveries, we cannot believe that the Father of mercies left his helpleſs creature to diſcover for himſelf his future exiſtence. Death, when firſt preſented to him, muſt have been a ghaſtly object; and had he been left without any hope of redemption from it, he would undoubtedly have ſunk into liſtleſs deſpondency.

But a proſpect of immortality is ſo pleaſing to the human mind, that if it was communicated to the firſt man, it would of courſe be cheriſhed by his poſterity; and there is no difficulty in conceiving how it might be handed down by tradition to very remote ages, among ſuch of his deſcendents as were not ſcattered over the face of the earth in ſmall and ſavage tribes.—In the courſe of its progreſs, it would frequently be new-modelled by the ever active imagination; and at laſt many abſurd and fantaſtic circumſtances would doubtleſs be combined with the original truth, that death puts not an end to human exiſtence.

But though we are firmly convinced that the firſt principles of uſeful knowledge, and among them the doctrine of a future ſtate, were communicated to man by

Reſurrection.

by his Maker; and though this doctrine, in large and permanent ſocieties, might certainly be conveyed more or leſs pure to late poſterity through the channel of tradition—we are far from attributing ſo much to tradition as ſome writers are diſpoſed to do, or thinking it the only ſource from which mankind could derive the belief of their exiſtence beyond the grave. In ſmall tribes of ſavages ſuch a tradition could hardly be preſerved; and yet ſome indiſtinct notions of a future ſtate have been found among tribes who are ſaid to have loſt all traditionary notions even of the being of a God.

8 Others imagine the notion might be conjectured from natural phenomena;

Others, therefore, are inclined to believe that, independent of any traditions, mankind might be led by certain phenomena to form ſome conjectures of a future ſtate. They obſerve, that although a few individuals perhaps may, yet it ſeldom happens that the whole individuals of any nation are exempted from dreaming: They obſerve, too, and this obſervation is founded on experience, that the images of the dead are from the remaining impreſſions of memory frequently ſummoned up in the fancy; and that it appears from all the languages of rude nations, who pay the greateſt attention to their dreams, and who ſpeak of ſeeing the dead in their viſions, that theſe images (A) have always been taken by them for realities; nay, ſome of the learned, and the celebrated Baxter is of the number, are diſpoſed to doubt whether theſe appearances be not ſomething more than illuſions of the brain: But whether they really be ſo or not, one thing is certain, that all nations in all countries, in the darkeſt ages and the rudeſt periods, are accuſtomed to dream; and whether ſleeping or waking, in the ſtillneſs of the night, in the gloom of ſolitude, in the fondneſs of friendſhip, in the rovings of love, the delirium of fever, and the anguiſh of remorſe, to ſee and converſe with the ſhades of the departed; and Lucretius * has remarked, that even the inferior animals are not exempted from ſuch illuſions of a reſtleſs fancy.

9 As from dreaming, &c.

* Lucret. lib. 4.

For often ſleeping racers pant and ſweat,
Breathe ſhort, as if they ran their ſecond heat;
As if the barrier down with eager pace
They ſtretch'd, as when contending for the race.
And often hounds, when ſleep hath clos'd their eyes,
They toſs, and tumble, and attempt to riſe;
They open often, often ſnuff the air,
As if they preſt the footſteps of the deer;
And ſometimes wak'd, purſue their fancy'd prey,
The fancy'd deer, that ſeem to run away,
Till quite awak'd, the followed ſhapes decay.
And ſofter curs, that lie and ſleep at home,
Do often rouſe, and walk about the room,
And bark, as if they ſaw ſome ſtrangers come.
And birds will ſtart, and ſeek the woods, by night,
Whene'er the fancy'd hawk appears in ſight,
Whene'er they ſee his wing or hear him ſight.

CREECH.

Theſe powers of fancy extend wide over animal creation; and it is on this general principle that necromancers and dreamers have in all ages eſtabliſhed their trade, that the ſtories of goblins have at all times ſo very eaſily procured belief, and that

Reſurrection.

The village matron, round the blazing hearth,
Suſpends the infant audience with her tales,
Breathing aſtoniſhment! Of witching rhymes
And evil ſpirits; of the deathbed call
Of him who robb'd the widow and devour'd
The orphan's portion; of unquiet ſouls
Ris'n from the grave to eaſe the heavy guilt
Of deeds in life conceal'd; of ſhapes that walk
At dead of night, and clank their chains, and wave
The torch of hell around the murderer's head.

AIKENSIDE.

Mankind in general would willingly diſpenſe with theſe troubleſome viſits of the dead. To prevent the return of the *zumbi* or the ghoſt, ſome nations of Africa uſe many ſuperſtitious rites *; and Kolben tells us, that the frighted Hottentots leave in the hut where a perſon has died all the utenſils and furniture, leſt the angry ghoſt, incenſed at their avarice, ſhould haunt them in their dreams, and infeſt them in the night. Divines and moraliſts have laboured to ſhow that theſe are merely imaginary terrors: but God and nature ſeem to have determined that they ſhall produce the ſame effects upon certain minds as if they were real; and that while there is any ſenſibility in the heart, while there is any remembrance of the paſt, and any conjuring power in the fancy; the ignorant, the benighted, the timid, ſhall often meet with the goblins of darkneſs, the ſpectres of the tomb, the apparitions that hover round the grave, and the forms of the dead in the midnight dream. See SPECTRE.

* Voyage to Congo and Angola. Churchill's Voyages.

10 Probable inferences from dreams, &c.

From theſe phenomena, which have been ſo common in all countries and in all ages, what would mankind naturally infer? Would they not infer, that there is ſomething in the nature of man that ſurvives death, and that there is a future ſtate of exiſtence beyond the grave? Are not ſtill many ſpecimens of this reaſoning preſerved in the ancient poets? and is it not thus that Achilles † reaſons after imagining that he ſaw the ghoſt of his friend Patroclus?

† Hom. Iliad. lib. 23. l. 103.

'Tis true, 'tis certain, man, though dead, retains
Part of himſelf; the immortal mind remains:
The form ſubſiſts without the body's aid,
Aerial ſemblance, and an empty ſhade.
This night my friend, ſo late in battle loſt,
Stood at my ſide a penſive plaintive ghoſt;
Ev'n now familiar as in life he came,
Alas! how diff'rent, yet how like the fame. POPE.

Lucretius *, a ſtudious obſerver of nature, though no friend to the ſoul's immortality, acknowledges frankly that theſe phantoms often terrify the mind, haunt us in our ſleep, and meet us while awake. He confeſſes, too, that by ſuch appearances mankind have been led to

* Lib. 3.

(A) Theſe images were called by the Greeks Εἴδωλα Θανόντων; and among the Romans they had various names, as *umbræ*, *lemures*, *manes*, *larvæ*, and were ſometimes called *occurſacula noctium*, *buſtorum formidamina*, *ſepulchrorum terriculamenta*, *animæ errantes*, which are all comprehended under the *ſpecies mortuorum*.

10 Precepts to believe the future existence of the soul; but, aware of the consequences,

——*Ne fata animæ, si hæremus, nosmet*
Deserere, et nostræ vitare incendia mortis,

endeavours to explain these curious phenomena on principles of the wildest and most fantastic principles of the Epicurean. In doing this, however, he pretends not to deny that these images appear to be real; but candidly acknowledges that

——They strike and shake
The airy frame, as when we are awake,
With strokes so lively, that we think we view
The absent dead, and think the image true.
CREECH.

We here see how the belief of the soul's immortality came to be general among mankind. But for this information we are much more indebted to the poets, who have given us faithful transcripts of nature, than to the philosophers who have wished to entertain us with their own theories, or to those laborious men of erudition, who have dreaded as much to examine the source of an ancient report as the friends of Ulysses to approach the coast of Cimmerian darkness. With them tradition is the ultimate boundary of research and as gorgons, chimeras, and hydras, have come down to us by tradition; so they, with great sagacity, suspect, that tradition must likewise be at the bottom of the soul's immortality, and occasion the visions and phantoms of the dead.

11 Folly of allowing too much to tradition.

To tradition we have allowed all that it can justly claim; but we cannot allow it to be the only source of this opinion: and we have felt the highest indignation upon hearing men of learning and genius affirm, from a true zeal for the honour of revelation, that mankind, without this instruction, could never have acquired the art of building huts to screen them from the cold, or have learned the method of propagating their species! The reader must not here suppose that we allude to Polydore Virgil (B). We have in our eye persons now alive, with whom we have conversed on the subject, and who (terrified at the length to which some philosophers have carried the doctrine of instincts, and others the reasoning powers of the mind) have contended, with the utmost earnestness, that we know nothing—not even the functions of our animal nature—but by tradition or written revelation.

12 Opinions of philosophers.

Having now seen the source of the opinion concerning the future existence of the soul, and pointed out the natural phenomena by which mankind were led to embrace it, we come next to review the arguments by which the philosophers attempted to confirm it.

Pythagoras believed, with the rest of his country, that annihilation was never the end, and that nonentity was never the beginning, of any thing that is. His general doctrine upon this subject was tersely expressed in very few words, *Ex nihilo nihil unquam, nihil interit*. He afterwards learned from Egyptian priests that the soul migrates into new bodies; and being, it seems, a person of a most extraordinary and astonishing memory, he found there was some truth in the story: for after musing, he began to remember that he was Euphorbus, the son of Pantheus, that was slain by Menelaus in the Trojan war; and upon a jaunt to Peloponnesus, recollected the shield which he had worn at the time of the siege, in one of the temples of Juno at Argos! That none might question the truth of his assertion, his followers presently removed all doubts by the famous argument, the IPSE DIXIT of Egyptian origin. Reflection. 13 Pythagoras's notion of transmigration.

14 Plato's doctrine of pre-existence.

As Pythagoras taught that human souls are frequently thrust into brute shapes, and, as some imagined, by way of punishment; it occurred to Plato, that all bodies, even the human, are a sort of prisons; and that, in consequence of this confinement, the soul was subjected to the rage of desire, appetite, and passion, and to all the wretched miseries of a jail. To explain this mystery, he supposed that desires and appetites belong to a soul that is purely animal residing in the body. But he was perplexed with another difficulty; for as he thought highly of the goodness of Deity, he could not imagine how she should imprison us without a crime. He supposed, therefore, that prior to its union with the present body, the soul had existed in one of ether, which it still retains; but that even in this etherial body it had felt something of impure desire; and happening to indulge the vicious appetite, had contracted some stains of pollution, for which it was confined in its present body as a house of correction to do penance and improve its morals.

15 And mode of proving it.

To prove this ideal pre-existence of the soul, Plato availed himself of an opinion that was general in his time, that coincided with the doctrines of Pythagoras, and that was partly founded on a sort of reasoning and observation. He thought that matter and intelligence are coeternal (see PLATONISM); that there are various orders of souls; that those of both the man and the brute are parts or emanations (C) of the *anima mundi*, or soul of the world; that all are ultimately parts or emanations of Deity itself; and that all their faculties are more or less restricted and confined, according to those organised systems with which they are connected. Know first (says one delivering his doctrines),

Know first, that heav'n and earth's compacted frame,
And flowing waters, and the starry flame,
And both the radiant lights, one common soul
Inspires, and feeds, and animates, the whole.

This

(B) This writer allots part of a chapter to show, "Quis primum instituerit artem meretriciam," as being, in his opinion, a traditionary practice. See Lib. iii. cap. 17. *De Rerum Inventoribus*.

(C) The Deity was conceived by the ancients sometimes as a solid, when inferior souls were called ἀπόσταγματα, *i. e.* [illegible] from him; and sometimes as a fluid, when they were considered as ἀπορροαὶ ἐμπυρίου [illegible]: but on one or other hypothesis did they reason consequentially. Their ἀπόσταγματα were often [illegible] to the Deity; and their ἀπορροαὶ often remained separate and distinct for a long while, without flowing back as they ought to have done, and mingling with the great ocean of spirit.

Resurrection.

This active mind, infus'd through all the ſpace,
Unites and mingles with the mighty maſs:
Hence men and beaſts the breath of life obtain,
And birds of air, and monſters of the main;
The ethereal vigour is in all the ſame,
And every ſoul is fill'd with equal flame;
As much as earthy limbs, and groſs alloy
Of mortal members, ſubject to decay,
Blunt not the beams of heav'n and edge of day (D).

DRYDEN.

Beſides this hypotheſis, that in ſome meaſure was common to others, Plato had an argument peculiarly his own. Happening to peep into the region of metaphyſics, he was ſomewhat ſurpriſed on obſerving the ideas which we derive from reflection and conſciouſneſs; and ſuppoſing that they could not have entered by the ſenſes, he naturally, though not very juſtly, concluded, that we muſt have received them in ſome ſtate of prior exiſtence.

As, according to him, the ſoul was eternal, as well as the matter which compoſed the body, and as their union was only temporary and accidental, he might have been ſatisfied that the death of the ſoul was not to be the conſequence of their ſeparation. But, ſome how or other, ſatisfied he was not. He had recourſe to a new argument. As the ſoul, he ſaid, was an active principle, and a ſelf-moving, it did not depend for its life on another; and therefore would always continue to exiſt, though the body were reduced to the general maſs out of which it was formed. See METAPHYSICS, Part III. chap. iv.

16 The opinions of the Gnoſtics.

Whether Plato had borrowed any of his doctrines from the eaſtern magi, we pretend not to ſay. We only obſerve a ſtriking ſimilarity, in ſome reſpects, between his and theirs. In Plato's philoſophy, the ſun, moon, and ſtars, were animated beings, and a ſort of divinities that originally had ſprung from the great fountain of heat and light, and our earthly bodies a ſort of dungeons in which our miſerable ſouls are benighted and debaſed by deſires, appetites, and paſſions. In the magian philoſophy, the Supreme Being was called *Oromaſdes*; was the god of light, or was light itſelf, and repreſented by Mithras, a ſubordinate divinity, and the ſame with the ſun. Another deity of very great power was Arimanes, the god of darkneſs, who preſided over matter, and was the origin of all evil (ſee POLYTHEISM).

Resurrection.

The ancient Gnoſtics, who derived their tenets from this ſource, believed, with Pythagoras and Plato, in a great number of ſubordinate genii; and ſaid, that Demiurgus, the god of matter and the ſoul or ſpirit of this world, had contrived the bodies of men and brutes; and in the former particularly, as in ſo many priſons, had confined a number of celeſtial ſpirits, that by expoſing them to the low deſires of appetite and paſſion, he might ſeduce them from their allegiance to the God of light, and render them more ſubmiſſive to himſelf. From theſe priſons the Supreme Being was continually making attempts to reſcue them; and in the mean time was frequently ſending divine meſſengers to enlighten and inſtruct them, and to render them capable of returning to the regions of light and happineſs, to which they had belonged (E).

The Stoics attempted to ſimplify this ſyſtem, which appears anciently to have pervaded Egypt and the eaſt, and which would ſeem to be no more than variouſly modified by Orpheus, Pythagoras, Plato, and others of the more northerly and weſtern nations. None of them allowed a creation out of nothing; and the ſhaping and modelling of matter into forms was variouſly explained, according as they happened to be moſt addicted to ſuperſtition, to morals, or to phyſics. Some aſcribed theſe operations to ancient Time, Chaos, and Darkneſs, and explained the future changes in nature by the genealogies of theſe deities; ſome obſerving attraction and repulſion, or at leaſt a ſort of agreement and diſcordance among bodies, were inclined to aſcribe them to Friendſhip and Hatred, or Love and Antipathy; ſome obſerving, that while one body roſe another deſcended, made Levity and Gravity primary agents; and ſome taking notice that living bodies ſprung from corruption, were diſpoſed to confer the ſame powers on Moiſture and Heat.

17 Of the Stoics.

The phyſical hypotheſes were what had moſt charms for the Stoics. From their ſyſtem immaterial beings were openly excluded; all things were regulated by phyſical laws or inexorable fate; and all things originated in the Το Ἑν or the *Firſt One*, which was probably ſuggeſted by the Μονας of Pythagoras. This Το Ἑν appears to have been a *materia prima* devoid of all the qualities of body. In their language it was an Αρχη or *firſt principle*, not ſubject to change. When it was inveſted with the properties of body, it then became a Στοι-

(D) The general doctrine, as delivered here in theſe verſes of Virgil, is the ſame with that not only of Pythagoras, but of the Stoics.

(E) Plato made the ſtars the native reſidence of inferior ſouls; and when theſe were thoroughly purified below, returned them home again: and therefore, ſays Virgil, alluding to his doctrine,

——————Some have taught
That bees have portions of ethereal thought,
Endu'd with particles of heav'nly fires;
For God the whole created maſs inſpires:
Thro' heav'n, and earth, and ocean's depth, he throws
His influence round, and kindles as he goes.
Hence flocks, and herds, and men, and beaſts, and fowls,
With breath are quicken'd, and attract their ſouls:
Hence take the forms his preſcience did ordain,
And into him at length reſolve again.
No room is left for death, they mount the ſky,
AND TO THEIR OWN CONGENIAL PLANETS FLY. *Dryden.*

Resurrection.

a [illegible] or an *element*; and then, so far as respected its qualities, especially its forms, it was subject to changes almost perpetual. The gods themselves and the souls of men were in this system only modifications of matter (F). Man was composed of their four elements, Fire, Air, Water, and Earth; and upon dissolution, every part returned to the element from which it had come, as the water of a vessel swimming in the sea unites with the ocean when the vessel is broken. This system, it is plain, cannot possibly admit of any separate consciousness of existence (G). The same may be said of the systems of Democrates and Epicurus, and all those who undertook to explain things upon physical principles (H). The chief merit of the physical systems appears to be this: Absurd as they were, it would seem from the whimsical and the almost childish reasoning of Lucretius, that they had a tendency to lead mankind from extravagant hypotheses to something that was similar to observation.

18 Of Aristotle.

What Aristotle thought of the separate existence of the soul after death is not very certain. The soul he calls an [illegible]; and if the reader can divine the meaning of the word, he perhaps can divine the meaning of the *Stagyrite*, and will then be a better diviner than we. At other times he says, that the soul is something divine; that it resembles the element of the stars; that it is something of a fiery nature; that it is the vicegerent of God in the body; and that the acuteness of the senses, the powers of the intellect, with the various kinds of appetites and passions, depend entirely on the qualities of the blood (I).

19 Of Critias and others.

Another opinion of very old date was that of the late ingenious Mr Hunter. According to him, the living principle resides in the blood. This opinion, which is mentioned by Moses, was adopted by Critias and others of the ancients. Harvey likewise embraced it. But Mr Hunter, who always wished to be thought an original, inclines to stand at the head of the opinion, and supports it by experiments similar to those of the famed Taliacotius in mending noses. Should any of our readers wish to extract the soul's immortality from such an opinion, we must refer them to the many resources of ingenuity, sophistry, and logic.

Among the Jews, the belief of a future and separate existence for a long time was deemed no essential article of their creed. Some thought that the soul was a spark in the moving of the heart; some imagined that it was the breath, and that upon the dissolution of the body it naturally vanished into soft air. The Sadducees denied the existence of either angel or spirit. Many believed the doctrine of ghosts, and were accustomed to invoke them at the grave. It is hence that we hear the prophets complaining that they were seeking from the living God unto dead men. Some imagined that there was a pre-existence of souls; and, in the case of a blind man, asked our Saviour, whether the man or his parents had sinned that he was born blind? Others inclined to a revolution of soul and body, and thought that our Saviour was either Elias or one of the old prophets returned; and a great many new-modelled their opinion of the soul's immortality according to certain passages in Scripture. The inspired mother of Samuel had said, "The Lord killeth and maketh alive: he bringeth down to the grave, and bringeth up." Isaiah had exclaimed, "Thy dead shall live; together with my dead body shall they arise: Awake, and sing, ye that dwell in the dust; for thy dew is as the dew of herbs, and the earth shall cast out the dead." Daniel had declared, that many of them that sleep in the dust of the earth shall awake to everlasting life, and some to shame and everlasting contempt. In the vision of the valley of dry bones, Ezekiel had seen that "at the word of the Lord" the bones came together, bone to his bone, the sinews and the flesh came upon them, and the skin covered them above, and the breath came into the bodies, and they lived and stood upon their feet. And a passage of Job led them to suppose, that at some distant and future period a particular time, which was called *the last* or the *latter day*, was appointed by heaven for the general resurrection of all those who are sleeping in their graves. "I know (says Job) my Redeemer liveth, and that he shall stand at the latter day upon the earth; and though after my skin worms destroy this body, yet in my flesh shall I see God."

Whether these passages were fairly interpreted agreeably to their true and original meaning, it is not here our business to inquire. It is sufficient for us to observe, that from them many of the Jews inferred the reality of a general resurrection (K). In this persuasion, Martha, speaking of her brother Lazarus, says to our Lord, "I know that he shall rise again in the resurrection at the last day." This resurrection appears to

(F) The Αρχη of the Stoics appears to be the same with the *Li* of the Chinese.

(G) Yet without regarding the inconsistency, many of the Stoics believed, that the soul continued separate long after death; though in general seemed to deny a future state of rewards and punishments.

(H) In his *Physical Cosmology*, Plato differed but little from the Stoic; but he had another sort of cosmogony, in which all things appear to have sprung from, and to be almost wholly composed of, metaphysical entities, as ideas of forms, numbers, and mathematical figures. These kinds of notions were common both to him and Pythagoras; and were originally borrowed from Egypt, where calculation and geometry were half deified. See PLATONISM.

(I) The immortal Harvey has collected these different opinions of the Stagyrite in Exercit. 52. *De Generatione Animalium*.

(K) At present some are for allowing only those of their own nation to share in the benefits of this resurrection; and some are not even for allowing them, except they be men of piety and virtue. To render this resurrection probable, the rabbins say, with some of the Mohometans, that there is a certain bone in the body which resists putrefaction, and serves as a seed for the next body*. What that bone is, is of no great moment, as any bone, we believe, in the skeleton will answer the purpose equally well. With respect to the manner of this resurrection, the learned Hody has quoted several opinions of the Jews, and, among others, that of the Chaldee

* See Pharisee.

Reſurrection. to have been a general opinion among the Phariſees; for although it was a notion of the ſect of the Sadducees that there was no reſurrection, neither angel nor ſpirit, yet the Phariſees, we are told, confeſſed both. And this aſſertion is plainly confirmed by St Paul himſelf when his countrymen accuſed him before Felix, "I confeſs unto thee (ſays this eminent apoſtle), that after the way which they call hereſy ſo worſhip I the God of my fathers, believing all things which are written in the law and in the prophets, and having hope toward God, which they themſelves alſo allow, that there ſhall be a reſurrection of the dead, both of the juſt and unjuſt."

21 Of the Chriſtians.

This reſurrection of the dead to judgment, though not perhaps in the ſame ſenſe in which the old Phariſees conceived it, is now generally and almoſt univerſally (L) maintained by Chriſtians (M). Yet the Chriſtians differ conſiderably with reſpect to the nature of the human ſoul. Some imagine, that this ſpirit is naturally mortal, and that it is propagated along with the body from the loins of the parent. In ſupport of this opinion, it has been obſerved that a great number of inſects and plants transfer their lives to their poſterity, and die ſoon after the act of propagation; that after this act the vital principle is in the moſt vigorous of plants and animals always found to be much exhauſted; and that Tertullian a father of the church, in attempting ſome experiments of the kind, became ſubject to a momentary blindneſs, and felt a portion of his ſoul going out of him (N).

Theſe imagine that immortality was only conditionally promiſed to man; that Adam forfeited this immortality by his diſobedience; and that Chriſt has reſtored us to the hopes of it again by his ſufferings and death: for as in Adam we have all died, ſo in Chriſt, they ſay, we ſhall all be made alive; and that now the ſting is taken from death, and the victory over our ſouls from the grave.

Others have conceived the human ſoul as naturally immortal, and as ſetting death and the grave at defiance. Adam, they ſay, died only in a figure; and only from the conſequences of this figure, which means ſin, has our Lord ſaved us. In this ſenſe Adam died on the very day in which he had ſinned; or he died literally in 1000 years, which with the Lord are as one day. To theſe arguments their opponents reply, What then is the victory over death and the grave? You muſt ſtill have recourſe to a new figure, and betake yourſelves to the ſecond death; though, after all, where is your grave? To this it is anſwered, that the ſoul of itſelf is naturally immortal, and that it depends not either for its exiſtence or the exerciſe of its faculties upon the body; that the properties of matter, as figure, magnitude, and motion, can produce nothing that is like to perception, memory, and conſciouſneſs. This is true, rejoin their opponents; but beſides theſe few properties of matter, which are only the objects of that philoſophy whith has lately and properly been termed *mechanical*, the chemical philoſophy has diſcovered other properties of matter; has found that matter is of various kinds; that it very often does not act mechanically; that it acquires many new properties by combination; and that no man, till farther experiment and obſervation, ſhould venture to aſſert how far the ſoul is or is not dependent on its preſent organiſed ſyſtem. The others, proceeding on their hypotheſis, maintain that the ſoul, as being immaterial, is not diviſible; and though the body of a frog may live without the head for a whole day; though the body of a tortoiſe may live without the head for a whole month; though a human limb may for ſome minutes after amputation continue to perform a vital motion, independent of a brain, a ſtomach, or a heart; and though the parts of a plant, a polype, or a worm, may ſurvive their ſeparation and become living wholes*, yet the ſoul, they obſerve, is not to be compared with the vital principles of plants and animals, nor ought to be divided on reaſons ſo ſlender as thoſe of analogy. Even granting, they ſay, that the ſoul were not naturally immortal of itſelf; yet the juſtice of God, which is not remarkable for its equal diſtribution of rewards and puniſhments in the preſent world, is bound to make ſome amends in the next. And to this again their opponents anſwer, as to the equal diſtribution of juſtice in a future world, of that we are aſſured on much bet-

Reſurrection.

*See Polypus and Reproduction.

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dee paraphraſt of the Canticles, aſſerting that the prophet Solomon had ſaid, "When the dead ſhall revive, it ſhall come to paſs that the Mount of Olives ſhall be cleft, and all the dead of Iſrael ſhall come out from thence; and the juſt too that died in captivity ſhall come through the way of the caverns under the earth, and ſhall come forth out of the Mount of Olives." He has likewiſe quoted Saunderſon's Voyage to the Holy Land, in which, we are told that many of the Jews, by their own account, are to riſe up in the valley of Jehoſaphat; and that in the *rowling* or *devolution* of the caverns, thoſe at a diſtance muſt ſcrape their way thither with their nails.

(L) The ſect of the Quakers explain it figuratively.

(M) The laſt quoted author * (*Reſurrection of the ſame Body, aſſerted from the traditions of the Heathens, the ancient Jews, and the primitive Church*) has endeavoured to ſhow that this doctrine, in the ſame ſenſe as we underſtand it, has been aſſerted by the ancient magi, and by the preſent heathen gaurs of Perſia, the relics of the ancient magi; by ſome of the ancient Arabians; by ſome of the banians of India; by the preſent inhabitants of the iſland of Ceylon, of Java, of Pegu, of Tranſiana; by ſome amongſt the Chineſe; by the Arderians in Guinea; and by the ancient Pruſſians. The proofs which he beings, it muſt be confeſſed, are not however always very ſatisfactory. It appears, even from his own account, that ſome of theſe had derived their notions from certain Chriſtians, Mahometans, or Jews. But the reader may judge of the great accuracy of his ideas from his bringing old Pythagoras and the Stoics, and even Democritus and Epcurus, in ſupport of the ſame or a ſimilar opinion.

* Hody

(N) In illo ipſo voluptatis ultimæ æſtu quo genitale virus expellitur, nonne aliquid de anima quoqe ſentimus exire, atque adeo marceſſimus et devigeſcimes cum lucis detrimento.

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for ground to think any of our readers can be [illegible] it is a myſtery known and whether the ſoul be immortal or not, we can eaſily believe what he ſaid is true, as we know him from whom we have received.

These, with Plato, ſuppoſe, that the ſoul is here as in priſon; though how or at what time it ſhould firſt have come into this dungeon they have not determined. They have only agreed, that upon its enlargement all its faculties are to receive an increaſe of power; and "having already ſtripped it of its corporeal veſtments, activity, and perception in and of itſelf, and put it into ſo complete a capacity for happineſs and miſery in a ſeparate ſtate," their hypotheſis does not require them to admit the laſt occaſion for a reſurrection; which accordingly is ſaid to have been an article of Baxter's creed (o).

A third opinion, which extends likewiſe to every ſpecies of plant and animal, is, that all ſouls were created at once with bodies of ether; that theſe bodies, occupying only a very ſmall ſpace, were packed up in their firſt progenitors, and there left to be afterwards evolved and clothed with matter of a groſſer kind by acts of generation and conſequent nutrition. For the proof of this theory we are referred to the ſmall animals ſeen through the microſcope, and likewiſe to thoſe which are ſuppoſed to eſcape even microſcopic obſervation; but, above all, to the eggs of inſects, which, though ſcarcely perceptible, yet contain in embryo a future caterpillar and all its coats, and within theſe a future butterfly with its legs and wings. Theſe philoſophers can perhaps account for the general taint of original ſin in ſome other way than has hitherto been done. We have only to add, that on their ſcheme the reſurrection is not a matter that ſeems to be indifferent.

22 Place of the dead near the grave.

The next thing that falls to be conſidered is the place of the dead. From a natural enough aſſociation of ideas, an opinion had very early prevailed, that the ſpirit continued near to the body; and the offerings therefore intended for the dead were by moſt nations preſented at the grave; and that on which the departed ſpirit is ſuppoſed to reſt is always placed near the grave in China.

[illegible]

From the dreams of the night and the natural tendency of the fancy to work and to ſummon up ſpectres when the world around us is involved in darkneſs, it has alſo been imagined, that theſe ſpirits delight in the [illegible] (p), or have been prohibited from [illegible] the exhilarating beams of day. And hence we are told,

That in the diſmal regions of the dead
Th' infernal king never raiſ'd his horrid head;
Leap'd from his throne, leſt Neptune's arm ſhould lay
His dark dominions open to the day,
And pour in light.

The nations, therefore, who have fancied a general receptacle for the dead, have thus been induced to place it in the weſt (q), where the night begins and the day ends. That part of the world which, in the diviſion of his father's dominions, fell to Pluto the infernal god, and where, according to Lactantius, Satan holds the empire of darkneſs, the Friendly Iſlanders have placed to the weſtward of a certain iſland which they call *Tejee;* ſome tribes of American Indians, in a country beyond the weſtern mountains; and Homer, ſomewhere to the weſtward of Greece at the boundaries of the ocean,

Reſurrection. 24 In the weſt.

Where in a lonely land and gloomy cells
The duſky nation of Cimmeria dwells;
The ſun ne'er views th' uncomfortable ſeats
When radiant he advances nor retreats.
Unhappy race! whom endleſs night invades,
Clouds the dull air, and wraps them round in ſhades.

23 Under the earth.

Another opinion entertained by the Greeks and ſome other nations was, that the place of departed ſpirits is under the earth. This opinion is frequently mentioned in Homer, in Virgil, and alluded to by the Jewiſh prophets. As for the prophets, we know the circumſtance from which they borrowed it: it was borrowed from thoſe ſubterraneous vaults where their chiefs were buried, and which have been deſcribed by modern travellers. In the ſides of theſe caverns there is ranged a great number of cells; and in theſe cells the mighty lay in a ſort of ſtate, with their weapons of war and their ſwords at their head. To theſe kinds of Egyptian cemeteries Ezekiel alludes, when he ſays, "that they ſhall not lie with the mighty that are fallen of the uncircumciſed, who are gone down to hell with their weapons of war, and they have laid their ſwords under their head." And Iſaiah, when thus ſpeaking of the prince of Babylon, "Thou ſhalt be brought down to hell, *to the ſides of the pit.* Hell from beneath is moved for thee, to meet thee at thy coming; it ſtirreth up the dead for thee, even all the chief ones of the earth; it hath raiſed up from their thrones all the kings of the nations. All the kings of the nations, even all of them, lie in glory, every one in his own houſe."

26 In hidden receptacles.

Many of the ancient fathers of the church aſſerted only, that the dead are now *in abditis receptaculis*, or in certain hidden and concealed places.

27 In the air.

Orpheus, Origen, and ſome others of the fathers, with the ancient Caledonian bard Oſſian, and the learned Dodwell among the moderns, imagined that the ſoul, when it left the body, went into the air, and reſided ſomewhere between the ſurface of the earth and the moon.

28 In new bodies.

Thoſe who believed in a tranſmigration cauſed the ſoul at death only to enter a new body, and kept the departed always with the living. This creed has been found in India, in Egypt, in Mexico, and in all thoſe countries where picture-writing has been much uſed. In this ſpecies of writing, the ſame picture is on fancied analogy transferred by metaphor to ſignify either

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(o) *An Hiſtorical View of the Controverſy concerning an Intermediate State, and the Separate Exiſtence of the Soul.*

(p) Some Turkiſh ghoſts are an exception, who uſe lamps or candles in their tombs, when their friends chooſe to ſupply them with theſe luxuries.

(q) The *weſt* and *darkneſs* are ſynonymous in Homer. Ω φιλοι, ἠ μεν δη Τ'ιδμεν ὅπη ζοφος, ἠδ' ὅπη ἠως. *(Odyſ.)* "O my friends! which is the weſt, or which is the eaſt, the place of darkneſs, or that of the morning, we cannot learn."

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ther a god or a man, a brute or a plant; and in thoſe countries where it was practiſed, men had uſually their names from animals, and were repreſented by their figure in writing (R). From this laſt ſtage of the proceſs, a tranſmigration was eaſily ſuppoſed: and hence we hear of the gods of Egypt wandering about like ſo many vagrants in brute ſhapes, and of princes being tranſlated into ſtars, becauſe a ſtar was their emblem in hieroglyphic, or ſtood for their name in figurative language. And, in like manner, we ſee, from the ſpecimen of this character which is ſtill preſerved on celeſtial globes, how the heavens at firſt came to be filled with bears, ſcorpions, and dragons, and with a variety of other animals.

29 State of the dead according to ſome rude nations.

The opinions concerning the ſtate of the dead are ſtill more numerous than thoſe concerning the place where they reſide. Rude nations have generally thought that the future ſtate is ſimilar to the preſent; that plants, animals, and inanimate things there, have their ſhades; and that theſe contribute as much to the pleaſures and conveniences of the dead as their realities do to the living; that huſbands have their wives (S), lovers their miſtreſſes, warriors their battles, huntſmen their ſport; and that all their paſſions, amuſements, and buſineſs, are the ſame as formerly. For this reaſon, that the dead may not appear unprovided in the next world, like the ancient Gauls, ſome tribes of India, America, and Africa, bury with them in the ſame grave their wives, their arms, their favourite animals, and their neceſſary utenſils.

30 According to the Egyptians.

The ancient Egyptians, who believed in tranſmigration, ſuppoſed that the ſoul was after death obliged to animate every ſpecies of bird and quadruped, of reptile and inſect, and was not to return to a human form till after a period of 3500 years. Others have confined their tranſmigrations to particular animals, as the ſoul of man to the human form, and the ſoul of the brute to the bodies of the ſpecies to which it belonged. Some have changed the brute into man, and man into the brute, that man might ſuffer injuries ſimilar to what he had inflicted, and the brute retaliate what he had ſuffered. Others have confined the human ſoul in plants and in ſtones; and Bell of Antermony mentions an Indian who ſuppoſed that his anceſtors might be in fiſhes.

31 According to Homer.

The notions of Homer were probably thoſe of many of his time. But theſe notions were diſmal indeed. When his hero Ulyſſes viſited the ſhades, many of the ghoſts ſeemed to retain the mangled and ghaſtly appearance which they had at death; and, what is worſe, ſeemed to be all ſtarving with hunger, innumerable multitudes, with loud ſhrieks, flocking to the ſteams of his ſlain victim as to a moſt ſumptuous and delicious banquet.

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For ſcarcely had the purple torrent flow'd,
And all the caverns ſmok'd with ſtreaming blood,
When, lo! appear'd along the duſky coaſts
Thin airy ſhoals of viſionary ghoſts;
Fair penſive youths, and ſoft enamour'd maids,
And wither'd elders, pale and wrinkl'd ſhades.
Ghaſtly with wounds, the forms of warriors ſlain,
Stalk'd with majeſtic port, a martial train.
Theſe, and a thouſand more, ſwarm'd o'er the ground,
And all the dire aſſembly ſhriek'd around.
Ulyſſes ſaw, as ghoſt by ghoſt aroſe,
All wailing with unutterable woes.
Alone, apart, in diſcontented mood,
A gloomy ſhade, the ſullen Ajax ſtood;
For ever ſad, with proud diſdain he pin'd,
And the loſt arms for ever ſtung his mind.
Upon Ulyſſes ſaying to Achilles,
Alive, we hail'd thee with our guardian gods;
And, dead, thou rul'ſt a king in theſe abodes;
The ſhade reply'd:
Talk not of ruling in this dol'rous gloom,
Nor think vain words (he cry'd) can eaſe my doom;
Rather I chooſe laborioufly to bear
A weight of woes, and breathe the vital air,
A SLAVE TO SOME POOR HIND THAT TOILS FOR BREAD,
THAN LIVE A SCEPTER'D MONARCH OF THE DEAD.

In this gloomy region no one is rewarded for his virtue, nor is puniſhed for his crimes, unleſs committed, like thoſe of Siſyphus, Tantalus, and Ixion, againſt the gods. All indeed are claſſed into groups, from a certain analogy of age, ſex, fate, and diſpoſition; but all appear to be equally unhappy, having their whole heart and affections concentrated in a world to which they are fated never to return.

The Elyſium of Homer is allotted only for the relations and deſcendants of the gods; and Menalaus goes to this country of perpetual ſpring (T), not as a perſon of ſuperior merit, but becauſe he had married the daughter of Jove.

32 Becomes a place of rewards and puniſhments.

Even long after a future ſtate had become the ſcene of rewards and puniſhments, theſe for the moſt part were diſtributed, not according to moral, but phyſical diſtinctions. With the Greeks and Romans, the ſoul was condemned to many calamities for a number of years,

(R) A military gentleman who reſided at Penobſcot during the late American war, aſſured us that the Indians, when deſired to ſubſcribe a written agreement, drew always the picture of the object or animal whoſe name they bore. But for fuller information on this ſubject, ſee Clavigero's Hiſt. of Mexico.

(S) The queſtion which the Sadducees put to our Saviour about the wife of the ſeven brothers, is a proof that the Phariſees thought there was marriage and giving in marriage in the future ſtate, and that it was ſomewhat ſimilar to the preſent.

(T) Homer ſends the ghoſt of Hercules to the ſhades, while Hercules himſelf is quaffing nectar with Hebe in the ſkies. One ſoul of the hero is therefore repining with the ghoſts of mortals in the regions below, while the other is enjoying all the happineſs of the gods above. (See ODYSSEY, B. II. near the end). Philoſophers ſince have improved on this hint of the poet; and men have now got rational, animal, and vegetable ſouls, to which ſometimes a fourth one is added, as properly belonging to matter in general. Homer inſinuates, that Menelaus was to be tranſlated to Elyſium without taſting death. This Elyſium is the habitation of men, and not of ghoſts, and is deſcribed as being ſimilar to the ſeat of the gods. Compare *Odyſſ.* iv. l. 563. and *Odyſſ.* vi. l. 43. in the Greek.

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years, if the body was not honoured with funeral rites. Among the Scandinavians, a natural death was attended with infamy, while a violent death, particularly in battle, gave a title to sit in the halls of Odin, and to quaff beer from the skulls of enemies. Among the Tlascalans, it was only the great that were permitted to animate birds and the nobler quadrupeds; the lower ranks were transformed into wounds, into poultry [illegible] and [illegible] animals. Among the Mexicans, those who were drowned, who died of a dropsy, tumors, or wounds, or such like diseases, went along with the children that had been sacrificed to the god of water, and in a cool and delightful place were allowed to indulge in delicious repasts and varieties of pleasures: those who died of other diseases, were sent to the north or centre of the earth, and were under the dominion of the gods of darkness. "The soldiers who died in battle, or in captivity among their enemies, and the women who died in labour, went to the house of the sun, who was considered as the prince of glory. In his mansions they led a life of endless delight. Every day the soldiers, on the first appearance of his rays, hailed his birth with rejoicings and with dancings, and the music of instruments and voices. At his meridian they met with the women, and in like festivity accompanied him to his setting. After four years of this glorious life, they went to animate clouds, and birds of beautiful feathers and of sweet song; but always at liberty to rise again, if they pleased, to heaven, or descend to the earth, to warble their songs, and to suck flowers*."

33 [illegible] to physical [illegible]

* Clavigero's Hist. of Mexico, vol. vi. p. 136.

These sentiments of a future state, conceived in a savage and a rude period, could not long prevail among an enlightened and civilized people. When the times of rapine and violence therefore began to cease; when societies regulated by certain laws began to be established; when martial prowess was less requisite, and the qualities of the heart had begun to give an importance to the character, the future state was also modelled on a different plan. In the Æneid of Virgil, an author of a highly cultivated mind, and of polished manners, it becomes a place of the most impartial and unerring justice; every one now receives a sentence suited to the actions of his past life, and a god is made to preside in judgment;

34 And afterwards according to moral distinctions.

Who hears and judges each committed crime,
Inquires into the manner, place, and time.
The conscious wretch must all his acts reveal,
Loth to confess, unable to conceal,
From the first moment of his vital breath,
To the last hour of unrepenting death.

The spirits of the dead no longer mingle together as in the less enlightened period of Homer; the vicious are dismissed to a place of torments, the virtuous sent to regions of bliss: indifferent characters are confined to a limbus*; and those who are too virtuous for hell, but too much polluted with the stains of vice to enter heaven without preparation, are for some time detained in a purgatory.

* Or paradise of fools.

35 Virgil's purgatory.

For there are various penances enjoin'd,
And some are hung to bleach upon the wind;
Some plung'd in waters, others purg'd in fires,
Till all the dregs are drain'd, and rust expires;
Till nothing's left of their habitual stains,
But the pure ether of the soul remains.

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When thus purified, they become fitted to receive the rewards of their past virtues, and now enter into those regions of happiness and joy.

36 His heaven.

With ether vested, and a purple sky,
The blissful seats of happy souls below,
Stars of their own, and their own suns they know;
Where patriots live, who, for their country's good,
In fighting fields were prodigal of blood.
Priests of unblemish'd lives here make abode,
And poets worthy their inspiring god;
And searching wits, of more mechanic parts,
Who grac'd their age with new-invented arts:
Those who to worth their bounty did extend;
And those who knew that bounty to commend.

These good men are engaged in various amusements, according to the taste and genius of each. Orpheus is still playing on his harp, and the warriors are still delighted with their chariots, their horses, and their arms.

The place of torment is at some distance.

37 His hell.

A gaping gulph, which to the centre lies,
And twice as deep as earth is distant from the skies;
From hence are heard the groans of ghosts, the pains
Of sounding lashes, and of dragging chains.
Here, those who brother's better claim disown,
Expel their parents, and usurp the throne;
Defraud their clients, and, to lucre sold,
Sit brooding on unprofitable gold.
Who dare not give, and even refuse to lend,
To their poor kindred, or a wanting friend.
Vast is the throng of these; nor less the train
Of lustful youths for foul adult'ry slain.
Hosts of deserters, who their honour sold,
And basely broke their faith for bribes of gold:
All these within the dungeon's depth remain,
Despairing pardon, and expecting pain.

38 His paradise of fools.

The souls of babes, of unhappy lovers, and some others, seem to be placed in a paradise of fools residing in a quarter distinct from Elysian Tartarus and Purgatory.

It is curious to observe, how much these ideas of a future state differ from the vague and simple conjectures of rude nations; and yet from their simple and rude conjectures, we can easily trace the successive changes in the writings of Homer, Plato, and Virgil; and may easily show, that those laws which different nations have prescibed for their dead, have always borne the strongest analogy to their state of improvement, their system of opinions, and their moral attainments. Some nations, as those of India, have fancied a number of heavens and hells, corresponding to some of their principal shades in virtue and vice; and have filled each of these places respectively with all the scenes of happiness and misery, which friendship and hatred, admiration, contempt, or rancour, could suggest. But having already observed the progress of the human mind in forming the grand and leading ideas of a future state, we mean not to descend to the modifications which may have occurred to particular nations, sects, or individuals.

39 The state of the dead as revealed in Scripture.

The belief of Christians respecting futurity demands our attention, as being founded on a different principle, namely, on express revelation from heaven. From many express declarations in Scripture, all Christians seem to be agreed, that there is a heaven appointed for the

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the good and a hell for the wicked. In this heaven the ſaints dwell in the preſence of God and the uninterrupted ſplendors of day. Thoſe who have been wiſe ſhine as the firmament, and thoſe who have converted many to righteouſneſs as the ſtars. Their bodies are glorious, immortal, incorruptible, not ſubject to diſeaſe, to pain, or to death. Their minds are ſtrangers to ſorrow, to crying, to diſappointment; all their deſires are preſently ſatisfied; while they are calling, they are anſwered; while they are ſpeaking, they are heard. Their mental faculties are alſo enlarged; they no more ſee things obſcurely, and as through a cloud, but continually beholding new wonders and beauties in creation, are conſtantly exclaiming, "Holy, holy, holy! is the Lord of Hoſts, worthy is he to receive glory, and honour, and thankſgiving; and to him be aſcribed wiſdom, and power, and might; for great and marvellous are his works, and the whole univerſe is filled with his glory."

40 The nature of heaven,

41 Of hell.

Their notions of hell differ conſiderably. Some underſtanding the Scriptures literally, have plunged the wicked into an abyſs without any bottom; have made this gulph darker than night; have filled it with rancorous and malignant ſpirits, that are worſe than furies; and have deſcribed it as full of ſulphur, burning for ever. This frightful gulph has by ſome been placed in the bowels, of the earth; by ſome in the ſun; by ſome in the moon; and by ſome in a comet: but as the Scriptures have determined nothing on the ſubject, all ſuch conjectures are idle and groundleſs.

Others imagine, that the fire and ſulphur are here to be taken in a figurative ſenſe. Theſe ſuppoſe the torments of hell to be troubles of mind and remorſes of conſcience; and ſupport their opinion by obſerving, that matter cannot act upon ſpirit; forgetting, perhaps, that at the reſurrection the ſpirit is to be clothed with a body, and, at any rate, that it is not for man vainly to preſcribe bounds to Omnipotence.

42 Of the middle ſtate, and different opinions about it.

What ſeems to have tortured the genius of divines much more than heaven or hell, is a middle ſtate. On this ſubject there being little revealed in Scripture, many have thought in incumbent upon them to ſupply the defect; which they ſeem to have done in different ways. From the Scriptures ſpeaking frequently of the dead as ſleeping in their graves, thoſe who imagine that the powers of the mind are dependent on the body, ſuppoſe that they ſleep till the reſurrection, when they are to be awakened by the trump of God, reunited to their bodies, have their faculties reſtored, and their ſentence awarded.

This opinion they ſupport by what St Peter ſays in the Acts, that David is not aſcended into heaven; and that this patriarch could not poſſibly be ſpeaking of himſelf when he ſaid, "Thou wilt not leave my ſoul in hell, *i. e.* the place of the dead." They obſerve, too, that the victory of Chriſt over death and the grave ſeems to imply, that our ſouls are ſubject to their power; that accordingly the Scripture ſpeaks frequently of the ſoul's drawing near to, of its being redeemed from, and of its deſcending into, the grave; that the Pſalmiſt, however, declares plainly, that when the breath of man goeth forth, he returneth to his earth, and that very day his thoughts periſh. And ſhould any one chooſe to conſult Eccleſiaſtes, he will find, that the living know that they ſhall die, but that the dead know not any thing: that their love, and their hatred, and their envy, are periſhed; and that there is no work, nor device, nor wiſdom, nor knowledge, in the grave, whither they are gone.

43 According to ſome a ſtate of ſleep;

Thoſe who believe that the ſoul is not for the exerciſe of its faculties dependent on the body, are upon its ſeparation at death obliged to diſpoſe of it ſome other way. In eſtabliſhing their theory, they uſually begin with attempting to prove, from Scripture or tradition, both its active and ſeparate exiſtence; but with proofs from tradition we intend not to meddle. Their arguments from Scripture being of more value, deſerve our ſerious conſideration; and are nearly as follow.

44 According to others, a ſtate of conſcious exiſtence.

Abraham, they ſay, Iſaac, and Jacob, are ſtill living, becauſe Jehovah is their God, and he, it is allowed, is not the God of the dead, but of the living. But their opponents reply, That this is the argument which our Saviour brought from the writings of Moſes to prove a future reſurrection of the dead; and that any perſon who looks into the context, will ſee it was not meant of a middle ſtate. From the dead living unto God, our Saviour infers nothing more than that they ſhall live at the reſurrection; and that theſe gentlemen would do well in future to make a diſtinction between ſimply living and living unto God: For though Abraham, Iſaac, and Jacob, be living unto God, our Saviour has aſſured us that Abraham is dead, and the prophets dead.

A ſecond argument is that glimpſe which St Paul had of paradiſe about 14 years before he had written his Second Epiſtle to the Corinthians. To this argument their opponents reply, That as St Paul could not tell whether, on that occaſion, he was out of the body or in the body, it is more than probable that the whole was a viſion; and, at any rate, it is no proof of a ſeparate exiſtence.

A third argument is, St Paul's wiſhing to be abſent from the body, and preſent with the Lord. But, ſay their opponents, St Paul deſired not to be unclothed, but to be clothed upon: and as ſome of thoſe who maintain a ſeparate exiſtence, bring Scripture to prove that the body ‖ continues united to Chriſt till the reſurrection; in that caſe, St Paul, if he wiſhed to be preſent with the Lord, ſhould have rather remained with his body than left it.

‖ Shorter Catechiſm.

A fourth argument is, the appearance of Moſes and Elias upon the mount of transfiguration. To which their opponents reply, that theſe ſaints appeared in their bodies; that Elias was never diveſted of his body; and that the account which we have of the burial of Moſes, has led ſome of the ableſt critics and ſoundeſt divines to conclude, that he was likewiſe tranſlated to heaven without taſting death. At any rate, ſay they, he might have been raiſed from the dead for the very purpoſe of being preſent at the tranſfiguration, as the bodies of other ſaints certainly were, to bear teſtimony to our Lord's reſurrection and victory over the grave.

A fifth argument is, what our Saviour ſaid to the thief, "Verily I ſay unto thee, to-day thou ſhalt be with me in paradiſe." The objection uſually made here is, that the expreſſion is evidently ambiguous, and that the ſenſe depends entirely on the punctuation: for if the point be placed after *to-day*, the meaning will be "Verily, even now, I tell thee, thou ſhalt be with me in paradiſe." But the import of paradiſe in this place, ſay the opponents, is likewiſe doubtful. We learn from St Peter's explanation of the 16th Pſalm, that our Saviour's

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wiſe, ſhould we not be left in hell; and we know that on the day of his reſurrection he would not ſuffer his ſoul to remain in hell, but bring it from the place of the dead, by which name of the world to come, as the Jews and primitive Chriſtians underſtood the Father. Hell, therefore, and paradiſe, conſcious duty, ſeem to be in this paſſage the very ſame thing, the place of the dead; and our Saviour's promiſe, that, ſhould he go to heaven at that time, he ſhould not ſurvey over death and the grave, to which power all mankind had become ſubject by the diſobedience of their firſt parents.

45 The ſouls of the faithful do not go to heaven till the reſurrection.

Without pretending to enter into the merits of this diſpute, the ingenious Burnet, in his Theory of the Earth, endeavours to prove, upon the authority of the ancient fathers, that paradiſe lies between the earth and the heavens; and the learned Dodwell, on the ſame authority, has made it the common receptacle of ſouls till the reſurrection; but has not told us whether or not they are to be accountable for the actions of this ſeparate exiſtence at the latter day, or are only to be judged according to the deeds that were done in their bodies.

46 The church of Rome ſuppoſes a purgatory.

This notion of a common receptacle has diſpleaſed many. The ſtate of purgation, obſcurely hinted in the doctrines of Pythagoras, and openly avowed by Plato and Virgil, has been adopted by the Romiſh divines, who ſupport their opinion on certain obſcure paſſages of ſcripture, which are always of a yielding and a waxen nature, may eaſily be twiſted to any hypotheſis, and like general love ſerpeuſe rather from intereſt than merit.

47 Others ſuppoſe that the ſoul after death enters a ſtate of rewards and puniſhments in a certain degree.

It has diſpleaſed others, becauſe they are anxious that the righteous ſhould have a foretaſte of their joys, and the wicked of their torments, immediately after death, which they infer to be certainly the caſe from the parable of the rich man and Lazarus (u). But to this it is objected, that the rich man is ſuppoſed to be in hell, the place of torments, and that this puniſhment ought not to take place on their own hypotheſis till after the ſentence at the reſurrection.

Another argument uſed for the intermediate ſtate is the viſion of St John in the Apocalypſe. In this viſion the Evangeliſt ſaw under the altar the ſouls of thoſe that were ſlain for the word of God and for the teſtimony which they held. Their opponents doubt whether theſe viſible ſouls, were immaterial, as St John heard them cry with a loud voice, and ſaw white robes given unto every one of them. If they had bodies, that circumſtance might chance to prove a reſurrection immediately after death, and ſo ſuperſede the general reſurrection at the laſt day.

While ſuch concluſions as are here drawn from the parable and viſion, ſay the oppoſers of an intermediate conſcious exiſtence, imply that the dead are already raiſed, and are now receiving the reſpective rewards of their virtues and their crimes; thoſe who maintain an intermediate ſeparate exiſtence, who ſpeak of the body as a priſon, and of the ſoul as receiving an increaſe of power when freed from the body, are certainly not more than conſiſtent with themſelves, when they think that this ſoul would derive an advantage from its after union with either a new ſyſtem of matter or the old one, however much altered. Baxter, they ſay, who ſaw the inconſiſtency, was aſhamed to reaſon ſomewhat like Æ- Reſurrection. neas,

> O, Father! can it be that ſoul ſublime
> Returns to vent our terreſtrial clime:
> Or that the gen'rous mind, relieſ'd at death,
> Should covet lazy limbs and mortal breath?

In no one inſtance, they continue, have Chriſtians perhaps more expoſed themſelves than in this argument wreſted from Scripture to their own hurt: by thus raſhly attempting to accommodate the ſacred doctrines of religion to a preconceived philoſophical hypotheſis, they have laid themſelves open to the ridicule of deiſts, and have been obliged, for the ſake of conſiſtency, either to deny or to ſpeak ſlightingly of the reſurrection; which is certainly the ſureſt foundation of their hope, ſeeing St Paul hath aſſured us, that if there be no reſurrection of the dead, then they which are fallen aſleep in Chriſt are periſhed, and thoſe who ſurvive may eat and drink, and act as they pleaſe, for to-morrow they die; and die, too, never to live again.

Though this reproof may be rather ſevere, we are ſorry to obſerve that there ſeems to have been ſometimes too much reaſon for it. A certain divine †, whoſe † Dr Watts. piety was eminent, and whoſe memory we reſpect, having written "An Eſſay toward the proof of a ſeparate Sate of Souls between Death and the Reſurrection, and the Commencement of the Rewards of Virtue and vice immediately after death," has taken this motto, "Becauſe ſentence againſt an evil work is not executed ſpeedily, therefore the heart of the ſons of men is fully ſet in them to do evil." "The doctrine, he ſays, of the reſurrection of the body and the conſequent ſtates of heaven and of hell, is a guard and motive of divine force, but it is renounced by the enemies of our holy Chriſtianity; and ſhould we give up the recompenſes of ſeparate ſouls, while the deiſt denies the reſurrection of the body, I fear, between both we ſhould ſadly enfeeble and expoſe the cauſe of virtue, and leave it too naked and defenceleſs."

This author, who wiſhes much that the puniſhment of crimes ſhould follow immediately after death, is of opinion, that if heaven intended to check vice and impiety in the world, it has acted unwiſely, if it really has deferred the puniſhment of the wicked to ſo late a period as the reſurrection. "For ſuch, he obſerves, is the weakneſs and folly of our natures, that men will not be ſo much influenced and alarmed by diſtant proſpects, nor ſo ſolicitous to prepare for an event which they ſuppoſe to be ſo very far off, as they would for the ſame event if it commences as ſoon as ever this mortal life expires. The vicious man will indulge his ſenſualities, and lie down to ſleep in death with this comfort, I ſhall take my reſt here for 100 or 1000 years, and perhaps in all that ſpace my offences may be forgotten; or let the worſt come that can come, I ſhall have a long ſweet nap before my ſorrows begin: and thus the force of divine terrors is greatly enervated by this delay of puniſhment."

Thus far our author, who thinks that his hypotheſis, if not true, is at leaſt expedient, and that from motives of expediency it ought to be inculcated as a doctrine

(u) Whitby ſhows that this parable was conformable to the notions of the Jews at that time; and even the Mahometans, who believe in the reſurrection of the dead, ſuppoſe likewiſe a ſtate of rewards and puniſhments in the grave.

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trine of Scripture; but how far his reaſons can be here juſtified we mean not to determine; we ſhall leave that to be ſettled by others, reminding them only that the diſtance of future rewards and puniſhments is not greater on the ſuppoſition of the ſleep of the ſoul than on the contrary hypotheſis. Every man who has but dipt into the ſcience of metaphyſics knows, and no man ever knew better than he who is believed to have been the author of the work before us, that time unperceived paſſes away as in an inſtant; and that if the ſoul be in a ſtate void of conſciouſneſs between death and the reſurrection, the man who has lain in his grave 1000 years will appear to himſelf to have died in one moment and been raiſed in the next. We would likewiſe recommend to thoſe who may henceforth be inclined to inculcate any thing as a doctrine of Scripture merely on account of its ſuppoſed expediency, always to remember that God is above, that they are below, that he is omniſcient, that they are of yeſterday and know little, that their words therefore ſhould be wary and few, and that they ſhould always ſpeak with reſpect of whatever concerns the Sovereign of the univerſe, or relates to his government either in the natural or moral world. For wilt thou, ſays the Higheſt, diſannul my judgment? Wilt thou condemn me that thou mayeſt be righteous? Shall he that contendeth with the Almighty inſtruct him? He that reproveth God let him anſwer it.

If, in ſtating theſe oppoſite opinions, we may ſeem to have favoured what has been called the ſleep of the ſoul, it is not from any conviction of its truth, for there are particular texts of Scripture which appear to us to militate againſt it. We are ſatisfied, however, that it is a very harmleſs opinion, neither injurious to the reſt of the articles of the Chriſtian faith nor to virtuous practice; and that thoſe who have poured forth torrents of obloquy upon ſuch as may have held it in ſimplicity and godly ſincerity, have either miſtaken the doctrine which they condemned, or been poſſeſſed by a ſpirit leſs mild than that of the goſpel (x).

48 The reſurrection repeatedly aſſerted in Scripture.

Whatever be the fate of the middle ſtate, the reſurrection ſtands on a different baſis. It is repeatedly aſſerted in Scripture; and thoſe grounds on which we believe it are authenticated facts, which the affectation, the ingenuity, and the hatred of ſceptics, have numberleſs times attempted in vain to diſprove. Theſe facts we are now to conſider, referring our readers for the character of the witneſſes, the authenticity of the goſpel-hiſtory, and the poſſibility of miracles, to the parts of this work where theſe ſubjects are treated (See Miracle, Metaphysics, Part I. Chap. vii. and Religion); or, ſhould more particular information be required, to the writings of Ditton, Sherlock, and Weſt.

Our Lord, after proving his divine miſſion by the miracles which he wrought, and by the completion of ancient predictions in which he was deſcribed, declared that the doctrine of a reſurrection was one of those truths which he came to announce. To ſhew that ſuch an event was poſſible, he reſtored to life the daughter of Jairus, a ruler of the ſynagogue, a young man of Nain, who was carried out on his bier to be buried, and his friend Lazarus, whoſe body at the time was thought to have become the prey of corruption. Though the two firſt of theſe miracles were wrought in the preſence of a number of witneſſes, yet the laſt, owing to particular circumſtances, produced a much greater noiſe among the Jews. It was performed on a perſon ſeemingly of ſome note, in the village of Bethany, not far from Jeruſalem, and in the preſence of a great many perſons who from the metropolis had come to condole with Mary and Martha. No doubts were entertained of the reality of Lazarus's death. Our Lord was at a diſtance when he expired, and his body had already been lying for ſome days in the grave. When he came forth at the voice of our Lord, all were aſtoniſhed. Thoſe from Jeruſalem, on returning home, are impatient to relate what they had ſeen; thoſe who heard of ſo memorable an event cannot conceal it; the report reaches the ears of the Phariſees and chief prieſts. They are ſoon made acquainted with every circumſtance; and dreading the iſſue, they think it neceſſary to call a council upon the occaſion, and concert the meaſures that ought to be purſued in a matter which was likely to be attended with ſo many and important conſequences. In this council, it ſeemed to be agreed that our Lord had performed, and was ſtill continuing to perform, many miracles: That this laſt miracle, as being of an extraordinary kind, would make many converts; and that if meaſures were not ſpeedily taken to prevent theſe uncommon diſplays of his power, all would believe on him: the jealouſy of the Romans would be excited, the rulers depoſed, and the nation of the Jews deprived of its few remaining privileges. Yet, notwithſtanding theſe private conceſſions made in the council, the members who dreaded to let their ſentiments be known to the people, affect in public to treat our Saviour as an impoſtor. But he who already had demonſtrated the abſurdity of their opinion, who ſuppoſed that his miracles were wrought by Beelzebub prince of the devils, is again ready to confute the ridiculous aſſertion of thoſe who pretended to ſay that they were a deception. His friend Lazarus was ſtill living at the diſtance of only a few miles, and many of the Jews who had gone to ſee him were ready to atteſt the truth of the report. If the rulers, apprehending the conſequences of the truth, be afraid to know it, and if they are unwilling to go to Bethany, or to ſend for Lazarus and thoſe who were preſent at his reſurrection, our Lord gives them a fair opportunity of detecting his fraud, if there was any ſuch to be found in him. To preſerve their power, and remove the jealous ſuſpicion of the Romans, it had been already determined in council to put him to death; and

(x) Perhaps no man has been more culpable in this reſpect than the celebrated Warburton, who ſeems at firſt to have himſelf denied an intermediate ſtate of conſcious exiſtence. He afterwards imagined that ſuch a ſtate is ſuppoſed, though not expreſsly aſſerted, in Scripture; and at laſt he maintained it with all the zeal and warmth of a proſelyte. To prove the ſincerity of his converſion, he treated his adverſaries with ſcurrilous nicknames, banter, and abuſe; a ſpecies of reaſoning which ſeldom ſucceeds in recommending a bad cauſe, and which never confers credit on one that is good.

[illegible] that the third day after his death he [illegible] the [illegible]. Here the place was reserved [illegible]. The [illegible] of the Pharisees and the chief [illegible] and put upon their guard; [illegible] for the [illegible] of Christianity, the [illegible] not guard with [illegible], or indeed, [illegible]. We know from the [illegible] expected to the [illegible], that our Lord was [illegible] by the rulers; that his miracles were [illegible]; and that his predictions in their private opinion, were not to be slighted. The [illegible] which they employed to prevent, even [illegible], the completion of his prophecy, were admirably calculated to remove the scruples of the [illegible], if their object was only [illegible]. At the next [illegible] of the [illegible], when the [illegible] of Caiaphas was put in execution, and when it was deemed expedient by the council that [illegible], to save the nation from the jealousy of [illegible]; as a proof of their steady loyalty to Rome he was apprehended, was tried as an enemy to her government, was at last condemned upon false evidence, and suspended on a cross until they were fully satisfied of his death. Even after his death, the spear of a soldier was thrust into his side; and the water that [illegible] with the blood is a proof to those who are [illegible] with the structure and economy of living bodies, that he must have been some time dead.

[illegible] After he was taken down from the cross, a seal was put on the door of the sepulchre in which he was laid, as the best check against secret fraud; and a guard of soldiers was stationed around it, as the best security against open violence. In spite, however, of all these precautions, the prediction was accomplished; the angel of God, descending from heaven with a countenance like lightning, and with raiment white as snow; the watch shake, and become as dead men; the earth quakes; the stone is rolled from the mouth of the sepulchre; the angel sits on it, and our Lord comes forth.

It was in vain for the Jews to allege that his disciples came in the night, and stole him away, while the watch were asleep. One must smile at these puerile assertions. How came the disciples to know that the watch were asleep; or what excuse had the watch for [illegible], and [illegible] which they knew to be capital in the Roman law? and how came they, in the name of wonder, to be brought as an evidence for those transactions that happened at the time when they [illegible]?

[illegible] modern infidels to this ill framed story, it is past dispute that it had none [illegible] that it was current. [illegible], the apostles were called before the council, and threatened with [illegible]. Their boldness upon that occasion was so provoking to the rulers, that the threat would have been instantly put in execution, had not Gamaliel, a doctor of the law of high reputation, put them in mind of other impostors who had perished in their attempts to mislead the people; and concluded a very sensible speech with these remarkable words: "And now, I say unto you, refrain from these men, and let them alone; for if this counsel, or this work, be of men, it will come to nought; but if it be of God, ye cannot overthrow it, lest haply ye be found even to fight against God." This advice the council followed. But is it possible that Gamaliel could have given it, or the council paid the least regard to it, had the story of the disciples stealing the body been then credited? Surely some among them would have observed, that a work or counsel, founded on imposture and fraud, could not be [illegible] of God, and they would unquestionably have [illegible] the apostles.

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The story of stealing the body is indeed one of the most senseless fictions that ever was invented in support of a bad cause. Our Lord was on earth 40 days after he arose. He appeared frequently to his disciples. He ate and drank in their presence; and when some of them doubted, he bade them handle him and see that he was not a spectre, showed the mark of the spear in his side, and the prints of the nails in his feet and hands. Besides thus appearing to his disciples, he was seen by more than 500 brethren at one time; all of whom, as well as his disciples, must necessarily have known him previous to his suffering, and could therefore attest that he was the person who was once dead but was then alive. Yet for strangers in general, who had not seen him previous to his death, and could not therefore identify his person after he arose, our Lord reserved many other proofs that were equally convincing. Before his ascension, he bade his disciples wait till they received power, by the Holy Ghost descending upon them: That then they should be witnesses with him, both in Jerusalem, and in all Judea, and in Samaria, and unto the uttermost ends of the earth; in order that the people of all these nations, observing the miracles, wrought in his name, might themselves become ocular witnesses that those who preached his resurrection were warranted to do so by his authority; and that this authority, on which so numerous miracles attended, must be divine.

51 Minute objections and trifling cavils.

We intend not here to examine the minute objections and cavils that have been advanced respecting the truth of this important fact. The kinds, however, we shall mention in general. Some have doubted of our Lord's resurrection, as being an event which is not confirmed by general experience, because they imagine that what happens once should happen again, and even repeatedly, in order to be true. Some, taking their own to be preferable schemes, have objected to the way in which it happened, and to the manner in which it is narrated.—Some have imagined, that possibly the gospel history may be false; that possibly the disciples were very ignorant, and might be deceived; that possibly, too, they were deep politicians, and a set of impostors; and that possibly the writings which detected their falsehoods may have been destroyed. It is difficult to reason, and worse to convince, against this evidence of possibilities: but we flatter ourselves, that to the candid reader it will appear sufficiently overturned in our article MIRACLE; where it is shown that neither clowns nor politicians could have acted the part that was acted by the apostles, had not the resurrection been an [illegible] fact.

Some of the objectors to it have also maintained, that possibly there is nothing material without us, that there is nothing mental within us, and that possibly the whole world is ideas. This mode of arguing we pretend not to explain; it is thought by some to proceed entirely from a perverseness of mind or disposition, while in books

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of medicine it is always considered as a symptom of disease, and the patient recommended to be treated in the hospital, and not in the academy.

52 Importance of the doctrine of a resurrection.

By his raising others, and particularly by rising himself, from the dead, our Saviour demonstrated that a resurrection from the dead is possible. And on that authority, which by his miracles he proved to be divine, he declared to his followers, that there is to be a general resurrection both of the just and of the unjust, instructing his disciples to propagate this doctrine through all nations; St Paul confessing, that if there be no resurrection of the dead, preaching is vain, and our faith is vain.

53 Of the order in which the dead are to be raised.

As to the order of succession in which the dead are to be raised, the Scriptures are almost silent. St Paul says, that every man is to rise in his own order, and that the dead in Christ are to rise first: and St John observed in his vision, that the souls of them which were beheaded for the witness of Jesus, and for the word of God, and which had not worshipped the beast, neither his image, neither had received his mark upon their foreheads, or in their hands, lived and reigned with Christ a thousand years; but the rest of the dead lived not again until the thousand years (y) were finished.

54 With what bodies they shall rise.

A question that has much oftener agitated the minds of men is, with what sort of bodies are the dead to be raised? St Paul has answered, with incorruptible and immortal bodies (z). And to silence the disputatious caviller of his day, he illustrated his doctrine by the growth of grain. "Thou fool (said he), that which thou sowest, thou sowest not that body that shall be, but bare grain, it may chance of wheat or of some other grain." To us it appears very surprising, that any one who reads this passage with the slightest attention, should perplex himself, or disturb the church with idle attempts to prove the identity of the bodies with which we shall die and rise again at the last day. The apostle expressly affirms, that "flesh and blood cannot inherit the kingdom of God; that we shall all be changed, in a moment, in the twinkling of an eye, at the last trump; that there are celestial bodies and bodies terrestrial; and that the glory of the celestial is one, and the glory of the terrestrial another."

That this implies a total change of qualities, will admit of no dispute; but still it has been considered as an article of the Christian faith, that we are to rise with the same bodies in respect of substance. What is meant by the identity of substance, with qualities wholly different, it is not very easy to conceive. Perhaps the meaning may be, that our incorruptible bodies shall consist of the same material particles with our mortal bodies, though these particles will be differently arranged to produce the different qualities. But as the particles of our present bodies are constantly changing, and as different particles compose the body at different times, a question has been put, With what set of particles shall we rise? Here a singular variety of opinions have been held. Some * contend, that we shall rise with the original

* Leibnitz.

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flamina of our bodies derived from our parents; some are for rising with that set of particles which they had at birth; some with the set which they are to have at death; and some with the particles which remain after maceration in water†; though, God knows, that in this maceration be continued long, these may arise with few or no particles at all. Another query has given much alarm. What if any of these particles should enter a vegetable, compose its fruit, and be eaten by a man, woman, or a child? Will not a dispute, similar to that apprehended by the Sadducees about the wife of the seven brothers, necessarily follow, whose particles are they to be at the resurrection? Against this confusion they trust that the goodness and wisdom of heaven will take all the proper and necessary measures; and they even venture to point out a way in which that may be done. A foot deep of earth, they observe, in two or three of the counties of England, supposing each person to weigh on an average about seven stones and a few pounds, would amply supply with material bodies 600,000,000 of souls for no less a space than 20,000 years§; and therefore there seems to be no necessity for the vamping up of their old materials to lodge and accommodate new souls.

† Hody.

§ See Hody's Resurrection of the same body asserted.

But, unluckily here, the question is not about the possibility of keeping the particles of different bodies separate and distinct. The question is rather, What have the Scriptures determined on the subject? Now the Scriptures say, that the spirit returns unto God who gave it. And should it be asked, in what place does he reserve it till the resurrection? the Scriptures reply, in the place of the dead; because the soul descends into the pit, is redeemed from the grave; and the sting of death, the last enemy that is to be destroyed, shall be taken away when the trumpet of God shall sound: at which time the dead that sleep in their graves shall awake, shall hear the voice, and shall come forth. There is not here so much as a word concerning the body; and therefore it was asked with what bodies are the dead to be raised? To which it was answered, the vile body is to be changed. The body which is, is not the body which shall be; for the corruptible must put on incorruption, and that which is mortal, put on immortality.

This curious discovery of the sentiments of Scripture we owe to a lay-man, the celebrated Locke; who, in one of his controversies with the bishop of Worcester, came to understand what he knew not before, namely, that nowhere have the Scriptures spoken of the resurrection of the same body in the sense in which it is usually conceived. The resurrection of the same person is indeed promised; and how that promise may be fulfilled, notwithstanding the constant change of the particles of the body, has been shown in another place. See Metaphysics, Part III. Chap. iii.

The advocates, therefore, for the resurrection of the mortal body, have again been obliged to betake themselves to the shifts of reasoning. It is proper, say they,

(y) These thousand years formed the happy millenium so often mentioned in the ancient fathers; and the learned Burnet, in his Theory of the Earth, has endeavoured to prove, that a similar notion prevailed among the Jews. See Millenium.

(z) Our Saviour rose with the same body, both as to substance and qualities; because it was necessary that his person should be known and identified after his resurrection.

[illegible] the [illegible] which [illegible] in [illegible] and virtue, [illegible] and [illegible] and punishments. Nor, granting this will, shall we [illegible] [illegible] to the [illegible], or be carried [illegible] forwards. The [illegible], from [illegible] [illegible] [illegible] [illegible] every particle [illegible] [illegible], and [illegible] rewards and punishments to the wise and virtuous that [illegible] [illegible] [illegible] during the time that they were in union with the rational principle; and the [illegible] that fell in [illegible] (or corrupted in some of the [illegible]) [illegible] between; while the other that [illegible] with the body became vicious, is admitted [illegible]

[illegible] this hypothesis supported by neither Scripture nor reason, nor is it supported by the ancient fathers. And they, it is confessed, are for the resurrection of the very same flesh. But this notion is directly contrary to the Scriptures, which have said, that flesh and blood are not to inherit the kingdom of God.

[illegible] of the dead.

But whatever be the bodies with which the dead are to be raised at the general resurrection, all mankind must appear in judgment, and receive sentence according to the deeds done in the body, without regard, so far as we know, to their actions and conduct in the middle state. After this sentence, the righteous are to enter into celestial and eternal joys, and the wicked to suffer the punishments of hell. These punishments some have supposed to be everlasting; others think, that after some temporary punishment, the souls of the wicked are to be annihilated; and others imagine, that after doing purgatorial penance for a while in hell, they are to be again received into favour; inclining to explain the denunciations of the Almighty as a child would do the threatenings of his mother, or a lover the affected chidings of his mistress (A).

RESUSCITATION, the same with resurrection and revivification. See the preceding article and RE-ANIMATION.

The term *resuscitation*, however, is more particularly used by chemists for the reproducing a mixed body from its ashes; an art to which many have pretended, as to reproduce plants, &c. from their ashes.

RETAIL, in commerce, is the selling of goods in small parcels, in opposition to wholesale. See COMMERCE.

RETAINER, a servant who does not continually dwell in the house of his master, but only attends upon special occasions.

RETAINING FEE, the first fee given to a serjeant or counsel at law, in order to make him sure, and prevent his pleading on the contrary side.

RETALIATION, among civilians, the act of returning like for like.

RETARDATION, in physics, the act of diminishing the velocity of a moving body. See GUNNERY, MECHANICS, PNEUMATICS, and PROJECTILES.

RETE MIRABILE, in anatomy, a small plexus or network of vessels in the brain, surrounding the pituitary gland. Rete Retiform.

RETENTION is defined by Mr Locke to be, a faculty of the mind, whereby it keeps or retains those simple ideas it has once received, by sensation or reflection. See METAPHYSICS, Part I. Chap. ii.

RETENTION is also used, in medicine, &c. for the state of contraction in the solids or vascular parts of the body, which makes them hold fast their proper contents. In this sense, retention is opposed to evacuation and excretion.

RETICULAR BODY (*corpus reticulare*), in anatomy, a very fine membrane, perforated, in the manner of a net, with a multitude of foramina. It is placed immediately under the cuticle; and when that is separated from the cutis, whether by art or accident, this adheres firmly to it, and is scarce possible to be parted from it, seeming rather to be its inner superficies than a distinct substance. In regard to this, we are to observe, first, the places in which it is found, being all those in which the sense of feeling is most acute, as in the palms of the hands, the extremities of the fingers, and on the soles of the feet. The tongue, however, is the part where it is most accurately to be observed: it is more easily distinguishable there than anywhere else, and its nature and structure are most evidently seen there.

Its colour in the Europeans is white; but in the negroes and other black nations it is black; in the tawny it is yellowish: the skin itself in both is white; and the blackness and yellowness depend altogether on the colour of this membrane.

The uses of the corpus reticulare are to preserve the structure of the other parts of the integuments, and keep them in their determinate form and situation. Its apertures give passage to the hairs and sweat through the papillæ and excretory ducts of the skin: it retains these in a certain and determinate order, that they cannot be removed out of their places, and has some share in preserving the softness of the papillæ, which renders them fit for the sense of feeling. See ANATOMY, n° 83.

RETICULUM, is a Latin word, signifying a *little* or *casting net*. It was applied by the Romans to a particular mode of constructing their buildings. In the city of Salino (see SALINO) are still to be seen remains of some walls, evidently of Roman origin from the *reticulum*. This structure consists of small pieces of baked earth cut lozengewise, and disposed with great regularity on the angles, so as to exhibit to the eye the appearance of cut diamonds; and was called *reticular*, from its resemblance to fishing-nets. The Romans always concealed it under a regular coating of other matter; and Mr Houel informs us, that this was the only specimen of it which he saw in all his travels through Sicily, Malta, and Lipari. It appears to be the remains of some baths, which

(A) The French convention, whose principles are equally new, daring, and destructive of all that is decent or of good report, have decided this question in a very summary way, by decreeing death to be an eternal sleep, a decree equally absurd in itself and fatal in its consequences. Since this article went to the press, however, we have learned, from the most respectable authority, that wild and absurd as the opinion is, it has been industriously propagated in the country, and that in some it has gained ground. The consequences of this, were it to become general (must indeed be) dreadful beyond all conception; and we shall afterwards take occasion to expose the opinion and its nefarious consequences at greater length than it is now possible to do in this place. See THEOLOGY.

Retimo || Retirement

which have been built for the convenience of ſea-bathing.

RETIMO, the ancient *Rhitymnia* of Stephen the geographer, and called by Ptolemy *Rhitymna*, is a fine city, lying at one end of a rich and fertile plain, on the north coaſt of the iſland of Candia. It is but a ſmall place, containing ſcarce 6000 inhabitants; but it is a biſhop's ſee, and the harbour is defended by a citadel, where a baſhaw reſides. It was taken by the Turks in 1647, and has been in their hands ever ſince. It is about 45 miles from Candia. E. Long. 24. 45. N. Lat. 35. 22.

The citadel, which ſtands on a rock jutting out into the ſea, would be ſufficient for the defence of the city, where it not ſituated at the foot of an high hill, from which it might be cannonaded with great advantage. The harbour is now almoſt filled with ſand, and is no longer acceſſible to ſhipping; nor do the Turks in any meaſure oppoſe the ravages of time, but behold with a careleſs eye the moſt valuable works in a ſtate of ruin. The French had formerly a vice-conſul at Retimo, to which ſhips uſed to repair for cargoes of oil; but they have been long unable to get into the harbour: to repair which, however, and to revive the commerce of Retimo, would be a moſt uſeful attempt. The plains around the city abound in a variety of productions. Great quantities of oil, cotton, ſaffron, and wax, are produced here; and they would be produced in ſtill greater quantities if the inhabitants could export their commodities. The gardens of Retimo bear the beſt fruits in the iſland; excellent pomegranates, almonds, piſtacho nuts, and oranges. The apricot-tree, bearing the michmich, the juice of which is ſo delicious, and its flavour ſo exquiſite, is found here. It is a kind of early peach, but ſmaller and more juicy than thoſe of France.

RETINA, in anatomy, the expanſion of the optic nerves over the bottom of the eye, where the ſenſe of viſion is firſt received. See Anatomy, n° 142. and Optics *(Index)* at *Eye* and *Viſion*.

RETINUE, the attendants or followers of a prince or perſon of quality, chiefly in a journey.

RETIRADE, in fortification, a kind of retrenchment made in the body of a baſtion, or other work, which is to be diſputed, inch by inch, after the defences are diſmantled. It uſually conſiſts of two faces, which make a re-entering angle. When a breach is made in a baſtion, the enemy may alſo make a retirade or new fortification behind it.

RETIREMENT, means a private way of life or a ſecret habitation. "Few (ſays an elegant writer) are able to bear ſolitude; and though retirement is the oſtenſible object of the greater part, yet, when they are enabled by ſucceſs to retire, they feel themſelves unhappy. Peculiar powers and elegance of mind are neceſſary to enable us to draw all our reſources from ourſelves. In a remote and ſolitary village the mind muſt be internally active in a great degree, or it will be miſerable for want of employment. But in great and populous cities, even while it is paſſive, it will be conſtantly amuſed. It is impoſſible to walk the ſtreets without finding the attention powerfully ſolicited on every ſide. No exertion is neceſſary. Objects pour themſelves into the ſenſes, and it would be difficult to prevent their admittance. But, in retirement, there muſt be a ſpirit of philoſophy and a ſtore of learning, or elſe the fancied ſcenes of bliſs will vaniſh like the colours of the rainbow. Poor Cowley might be ſaid to be melancholy mad. He languiſhed for ſolitude, and wiſhed to hide himſelf in the wilds of America. But, alas! he was not able to ſupport the ſolitude of a country village within a few miles of the metropolis!

Dr Knox.

"With a virtuous and cheerful family, with a few faithful and good-humoured friends, with a well-ſelected collection of elegant books, and with a competency, one may enjoy comforts even in the deſerted village, which the city, with all its diverſions, cannot ſupply."

Retort, Retracts.

RETORT, in chemiſtry, an oblong or globular veſſel with its neck bent, proper for diſtillation. See Chemistry, n° 576.

In the fifth volume of the Tranſactions of the London Society for the Encouragement of Arts, p. 96. we find a paper containing a method for preventing ſtone retorts from breaking; or ſtopping them when cracked, during any chemical operation, without loſing any of the contained ſubject. "I have always found it neceſſary (ſays the writer) to uſe a previous coating for filling up the interſtices of the earth or ſtone, which is made by diſſolving two ounces of borax in a pint of boiling water, and adding to the ſolution as much ſlaked lime as will make it into a thin paſte; this, with a common painter's bruſh, may be ſpread over ſeveral retorts, which when dry are then ready for the proper preſerving coating. The intention of this firſt coating is, that the ſubſtances thus ſpread over, readily vitrifying in the fire, prevent any of the diſtilling matters from pervading the retort, but does in nowiſe prevent it from cracking.

"Whenever I want to uſe any of the above coated retorts; after I have charged them with the ſubſtance to be diſtilled, I prepare a thin paſte, made with common linſeed oil and ſlaked lime well mixed, and perfectly plaſtic, that it may be eaſily ſpread: with this let the retorts be covered all over except that part of the neck which is to be inſerted into the receiver; this is readily done with a painter's bruſh: the coating will be ſufficiently dry in a day or two, and they will then be fit for uſe. With this coating I have for ſeveral years worked my ſtone retorts, without any danger of their breaking, and have frequently uſed the ſame retort four or five times; obſerving particularly to coat it over with the laſt mentioned compoſition every time it is charged with freſh materials: Before I made uſe of this expedient, it was an even chance, in conducting operations in ſtone and earthen retorts, whether they did not crack every time; by which means great loſs has been ſuſtained. If at any time during the operation the retorts ſhould crack, ſpread ſome of the oil compoſition thick on the part, and ſprinkle ſome powder of ſlacked lime on it, and it immediately ſtops the fiſſure, and prevents any of the diſtilling matter from pervading; even that ſubtile penetrating ſubſtance the ſolid phoſphorus will not penetrate through it. It may be applied without any danger, even when the retort is red hot; and when it is made a little ſtiffer, is more proper for luting veſſels than any other I ever have tried; becauſe if properly mixed it will never crack, nor will it indurate ſo as to endanger the breaking the necks of the veſſels when taken off."

RETRACTS, among horſemen, pricks in a horſe's feet, ariſing from the fault of the farrier in driving nails that

[illegible] ...ch, on the day next after the octave, or eighth day after Hillary term: on the day next after the fifteenth day from Hilary; on the day after Purification; and on the next day after the octave of the Purification. In the common pleas, in fifteen days from the feaſt of St Hillary: from the day of St Hillary, in fifteen days: on the day after the purification: in eight days of the Purification. Eaſter term has four returns, viz. in the king's-bench, on the day next after the fifteenth day from Eaſter: on the day next after the three weeks from Eaſter: on the day next after one month from Eaſter: on the day next after five weeks from Eaſter: and on the day next after the day following Aſcenſion-day. In the common pleas, in fifteen days from the feaſt of Eaſter: in three weeks from the feaſt of Eaſter: in one month from Eaſter day: in five wheeks from Eaſter day: on the day after the Aſcenſion-day. Trinity term has four returns, viz. on the day following the ſecond day after Trinity: on the day following the eighth day after Trinity: on the day next after the fifteenth day from Trinity: on the day next after three weeks from Trinity. In the common pleas, on the day after Trinity: in eight days of Trinity: in fifteen days from Trinity: in three weeks from Trinity. Michaelmas term has ſix returns, viz. on the day next after three weeks from St Michael: on the day next after one month of St Michael: on the day following the ſecond day after All-ſouls: on the day next after the ſecond day after St Martin: on the day following the octave of St Martin: on the day next after fifteen days of St Martin. In the common pleas, in three weeks from St Michael: in one month from St Michael: on the day after All-ſouls: on the day after St Martin: on the octave of St Martin: in fifteen days from St Martin. It is to be obſerved, that, as in the king's-bench, all returns are to be made on ſome particular day of the week in each term, care muſt be taken not to make the writs out of that court returnable on a non-judical day; ſuch as Sunday, and All-ſaints, in Michaelmas term, the Purification in Hillary, the Aſcenſion in Eaſter, and Midſummer-day, except it ſhould fall on the firſt day of Trinity term. Return

[illegible] ...ſtale or make water backwards, both male and female.

RETURN (*retorno* or *returnal*), in law, is uſed in divers ſenſes. 1. Return of writs by ſheriffs and bailiffs is a certificate made by them to the court, of what they have done in relation to the execution of the writ directed to them. This is wrote on the back of the writ by the officer, who thus ſends the writ back to the court from whence it iſſued, in order that it may be filed. 2. Return of a commiſſion, is a certificate or anſwer ſent to the court from whence the commiſſion iſſues, concerning what has been done by the commiſſioners. 3. Returns, or days in bank, are certain days in each term, appointed for the return of writs, &c. Thus Hillary term has four returns, viz. in the king's

Returns, in a military ſenſe, are of various ſorts, but all tending to explain the ſtate of the army, regiment, or company; namely, how many capable of doing duty, on duty, ſick in quarters, barracks, infirmary, or hoſpital; priſoners, abſent with or without leave; total effective; wanting to complete the eſtabliſhment, &c.

RETUSARI, an iſland in Ruſſia, in a long ſlip of land, or rather ſand, through the middle of which runs a ridge of granite. It is 20 miles from Peterſburg by water, four from the ſhore of Ingria, and nine from the coaſt of Carelia. It is about 10 miles in circumference, and was overſpread with firs and pines when Peter firſt conquered it from the Swedes. It contains at preſent about 30,000 inhabitants, including the ſailors and garriſon, the former of whom amount to about 12,000, the latter to 1500 men. The iſland affords a ſmall quantity of paſture, produces vegetables, and a few fruits, ſuch as apples, currants, gooſeberries, and ſtrawberries, which thrive in this northern climate. Coxe's Travels into Ruſſia.

RETZ, (Cardinal de). See Gondi.

RETZIA; in botany; a genus of the monogynia order, belonging to the pentandria claſs of plants, and

to

Reutlingen to the 29th natural order, *Campanaceæ*. The capſule is bilocular, the corolla cylindrical, and villous without; the ſtigma bifid.

Revelation.

REUTLINGEN, a handſome, free, and imperial town of Germany, in the circle of Suabia, and duchy of Wirtemberg; ſeated in a plain on the river Eſchez, near the Neckar, adorned with handſome public buildings, and has a well frequented college. E. Long. 9. 10. N. Lat. 48. 31.

REVE, Reeve, or *Greve*, the bailiff of a franchiſe, or manor, thus called, eſpecially in the weſt of England. Hence ſhire-reeve, theriff, port-grieve, &c.

REVEILLE, a beat of drum about break of day, to give notice that it is time for the ſoldiers to ariſe, and that the ſentries are to forbear challenging.

REVEL, a port town of Livonia, ſituated at the ſouth entrance of the gulph of Finland, partly in a plain and partly on a mountain; 133 miles ſouth-weſt of Peterſburg, and 85 ſouth-eaſt of Abo. It is a place of great trade, and holds two fairs yearly, which are viſited by merchants from all countries, but particularly by thoſe of England and Holland. It is a ſtrong and a rich place, with a capital harbour. It is ſurrounded with high walls and deep ditches, and defended by a caſtle and ſtout baſtions. It was confirmed to the Swedes at the peace of Oliva, conquered by Peter the Great in 1710, and ceded to Ruſſia in 1721. The conqueſt of it was again attempted by the Swedes in 1790. The duke of Sudermania, with the Swediſh fleet, attempted to carry the harbour; but after an obſtinate engagement with the Ruſſian fleet, he was obliged to give it up; but it was but for a very ſhort while. He retired about 20 leagues from the harbour, to repair the damage his fleet had ſuſtained, and to prepare for a ſecond attack before any relief could be afforded to the Ruſſian fleet. As ſoon as he had refitted, he ſailed for the harbour, at a league diſtant from which the Ruſſian fleet was diſcovered, ready to diſpute with the Swedes the entrance. Upon a council being held by the Duke, it was reſolved to attack the Ruſſians; and the ſignals being given, the fleet bore down for the attack, which was maintained for near ſix hours with the utmoſt fury: at length the Swedes broke the Ruſſian line, which threw them into much confuſion; when the Swedes, taking the advantage of the general confuſion into which the Ruſſians were thrown, followed them with their whole force into the harbour, where the conflict and carnage were dreadful on both ſides, though the Swedes certainly had the worſt of it; at the ſame time that their ſkill and bravery is indiſputable.

This valuable place was again confirmed to Ruſſia by the peace. The government of Revel or Eſthonia is one of the diviſions of the Ruſſian empire, containing five diſtricts. 1. Revel, on the Baltic ſea. 2. Baltic-port, about 40 verſts weſtward from Revel 3. Habſal, or Hapſal, a maritime town. 4. Weiſſenſtein, on the rivulet Saida, about 80 verſts from Revel. 5. Weſenberg, about 100 verſts from Revel, at about an equal diſtance from that town and Narva.

REVELATION, the act of revealing, or making a thing public that was before unknown; it is alſo uſed for the diſcoveries made by God to his prophets, and by them to the world; and more particularly for the books of the Old and New Teſtament. See Bible, Christianity, Miracle, Religion, and Theology.

Revelation.

The principal teſts of the truth of any revelation, are the tendency of its practical doctrines; its conſiſtency with itſelf, and with the known attributes of God; and ſome ſatisfactory evidence that it cannot have been derived from a human ſource.

Before any man can receive a written book as a revelation from God, he muſt be convinced that God exiſts, and that he is poſſeſſed of almighty power, infinite wiſdom, and prefect juſtice. Now ſhould a book teaching abſurd or immoral doctrines (as many chapters of the Koran do, and as all the traditionary ſyſtems of Paganiſm did), pretend to be revealed by a God of wiſdom and juſtice, we may ſafely reject its pretenſions without farther examination than what is neceſſary to ſatisfy us that we have not miſunderſtood its doctrine. Should a book claiming this high origin, enjoin in one part of it, and forbid in another, the ſame thing to be done under the ſame circumſtances, we may reject it with contempt and indignation; becauſe a being of infinite wiſdom can never act capriciouſly or abſurdly. Still, however, as it is impoſſible for us to know how far the powers of men may reach in the inveſtigation or diſcovery of uſeful truth, ſome farther evidence is neceſſary to prove a doctrine of divine origin, than its mere conſiſtency with itſelf, and with the principles of morality; and this evidence can be nothing but the power of working miracles exhibited by him by whom it was originally revealed. In every revelation confirmed by this evidence, many doctrines are to be looked for which human reaſon cannot fully comprehend; and theſe are to be believed on the teſtimony of God, and ſuffered to produce their practical conſequences. At this kind of belief the ſhallow infidel may ſmile contemptuouſly; but it has place in arts and ſciences as well as in religion. Whoever avails himſelf of the demonſtrations of Newton, Bernoulli, and others, reſpecting the reſiſtance of fluids, and applies their concluſions to the art of ſhip-building, is as implicit a believer, if he underſtand not the principles of fluxions, as any Chriſtian; and yet no man will ſay that his faith is not productive of important practical conſequences. He believes, however, in man, while the Chriſtian believes in God; and therefore he cannot pretend that his faith reſts on a ſurer foundation.

Mr Locke, in laying down the diſtinct provinces of reaſon and faith, obſerves, 1. That the ſame truths may be diſcovered by revelation which are diſcoverable to us by reaſon. 2. That no revelation can be admitted againſt the clear evidence of reaſon. 4. That there are many things of which we have but imperfect notions, or none at all; and others, of whoſe paſt, preſent, or future exiſtence, by the natural uſe of our faculties we cannot have the leaſt knowledge: and theſe, being beyond the diſcovery of our faculties, and above reaſon, when revealed, become the proper object of our faith. He then adds, that our reaſon is not injured or diſturbed, but aſſiſted and improved by new diſcoveries of truth coming from the fountain of knowledge. Whatever God has revealed is certainly true; but whether it be a divine revelation or not, reaſon muſt judge, which can never permit the mind to reject a greater evidence to embrace what is leſs evident.

[illegible] There can be no evidence that any traditional [illegible] original, in the words we receive [illegible] it, so clear and so certain as that of the principles of reason: and, therefore, [illegible] to the clear and self-[illegible] reason, has a right to be urged or [illegible] a matter of faith, wherein reason has [illegible].

[illegible] See APOCALYPSE.

REVELS, [illegible] of dancing, masking, acting [illegible], &c. anciently very frequent in the [illegible] of court and in noblemen's houses, but now much disused. The officer who has the direction of the revels at court is called the *Master of the Revels*.

REVENGE, means the return of injury for injury, and differs materially from that sudden resentment which rises in the mind immediately on being injured; which, so far from being culpable when restrained within due bounds, is absolutely necessary for self-preservation. Revenge, on the contrary, is a cool and deliberate wickedness, and is often executed years after the offence was given; and the desire of it is generally the effect of littleness, weakness, and vice; while, to do right, and to suffer wrong, is an argument of a great soul, that scorns to stoop to suggested revenges.

Revenge is but a frailty incident
To craz'd and sickly minds; the poor content
Of little souls, unable to surmount
An injury, too weak to bear affront. *Dryden.*

Revenge is generally the concomitant of savage minds, of minds implacable, and capable of the most horrid barbarities; unable to set any limits to their displeasure, they can confine their anger within no bounds of reason.

Cruel revenge, which still we find
The weakest frailty of a feeble mind.
Degenerous passion, and for man too base,
It seats its empire in the savage race.
Juvenal.

The institution of law prevents the execution of private revenge, and the growth of civilization shows its impropriety. Though in modern times a species of revenge is sanctioned by what is called the law of honour, which evades the law of the land indeed, but which is equally mean and disgraceful as the other kinds, and is of consequences equally baneful. See ANGER, DUELLING, and RESENTMENT.

REVENUE, the annual income a person receives from the rent of his lands, houses, interest of money in the stocks, &c.

Royal REVENUE, that which the British constitution hath vested in the royal person, in order to support his dignity and maintain his power; being a portion which each subject contributes of his property, in order to secure the remainder. This revenue is either *ordinary* or *extraordinary*.

I. The king's *ordinary* revenue is such as has either subsisted time out of mind in the crown; or else has been granted by parliament, by way of purchase or exchange for such of the king's inherent hereditary revenues as were found inconvenient to the subject.—In saying that it has subsisted time out of mind in the crown, we do not mean that the king is at present in the actual possession of the whole of his revenue. Much (nay the greatest part) of it is at this day in the hands of subjects; to whom it has been granted out from time to time by the kings of England: which has rendered the crown in some measure dependent on the people for its ordinary support and subsistence. So that we must be obliged to recount, as part of the royal revenue, what lords of manors and other subjects frequently look upon to be their own absolute rights; because they and their ancestors are and have been vested in them for ages, though in reality originally derived from the grants of our ancient princes.

Revenue.

Blackst. Comment.

1. The first of the king's ordinary revenues, which may be taken notice of, is of an ecclesiastical kind (as are also the three succeeding ones), viz. the custody of the temporalities of bishops. See TEMPORALITIES.

2. The king is entitled to a CORODY, as the law calls it, out of every bishopric; that is, to send one of his chaplains to be maintained by the bishop, or to have a pension allowed him till the bishop promotes him to a benefice. This is also in the nature of an acknowledgement to the king, as founder of the see, since he had formerly the same corody or pension from every abbey or priory of royal foundation. It is supposed to be now fallen into total disuse; though Sir Matthew Hale says, that it is due of common right, and that no prescription will discharge it.

3. The king also is entitled to all the tithes arising in extraparochial places: though perhaps it may be doubted how far this article, as well as the last, can be properly reckoned a part of the king's own royal revenue; since a corody supports only his chaplains, and these extraparochial tithes are held under an implied trust that the king will distribute them for the good of the clergy in general.

4. The next branch consists in the first-fruits and tenths of all spiritual preferments in the kingdom. See TENTHS.

5. The next branch of the king's ordinary revenue (which, as well as the subsequent branches, is of a lay or temporal nature) consists in the rents and profits of the demesne lands of the crown. These demesne lands, *terræ dominicales regis*, being either the share reserved to the crown at the original distribution of landed property, or such as came to it afterwards by forfeitures or other means, were anciently very large and extensive; comprising divers manors, honours, and lordships; the tenants of which had very peculiar privileges, when we speak of the tenure in ancient demesne. At present they are contracted within a very narrow compass, having been almost entirely granted away to private subjects. This has occasioned the parliament frequently to interpose; and particularly after King William III. had greatly impoverished the crown, an act passed, whereby all future grants or leases from the crown for any longer term than 31 years or three lives, are declared to be void; except with regard to houses, which may be granted for 50 years. And no reversionary lease can be made, so as to exceed, together with the estate in being, the same term of three lives or 31 years; that is, when there is a subsisting lease, of which there are 20 years still to come, the king cannot grant a future interest, to commence after the expiration of the former, for any longer term than 11 years

Revenue. years. The tenant muſt alſo be made liable to be puniſhed for committing waſte; and the uſual rent muſt be reſerved, or, where there has uſually been no rent, one-third of the clear yearly value. The misfortune is, that this act was made too late, after almoſt every valuable poſſeſſion of the crown had been granted away for ever, or elſe upon very long leaſes; but may be of benefit to poſterity, when thoſe leaſes come to expire.

6. Hither might have been referred the advantages which were uſed to ariſe to the king from the profits of his military tenures, to which moſt lands in the kingdom were ſubject, till the ſtatute 12 Car. II. c. 24. which in great meaſure aboliſhed them all. Hither alſo might have been referred the profitable prerogative of purveyance and pre-emption: which was a right enjoyed by the crown of buying up proviſions and other neceſſaries, by the intervention of the king's purveyors, for the uſe of his royal houſehold, at an appraiſed valuation, in preference to all others, and even without conſent of the owner: and alſo of forcibly impreſſing the carriages and horſes of the ſubject, to do the king's buſineſs on the public roads, in the conveyance of timber, baggage, and the like, however inconvenient to the proprietor, upon paying him a ſettled price. A prerogative which prevailed pretty generally throughout Europe during the ſcarcity of gold and ſilver, and the high valuation of money conſequential thereupon. In thoſe early times, the king's houſehold (as well as thoſe of inferior lords), were ſupported by ſpecific renders of corn, and other victuals, from the tenants of the reſpective demeſnes; and there was alſo a continual market kept at the palace-gate to furniſh viands for the royal uſe. And this anſwered all purpoſes, in thoſe ages of ſimplicity, ſo long as the king's court continued in any certain place. But when it removed from one part of the kingdom to another (as was formerly very frequently done), it was found neceſſary to ſend purveyors beforehand, to get together a ſufficient quantity of proviſions and other neceſſaries for the houſehold: and, leſt unuſual demands ſhould raiſe them to an exhorbitant price, the powers beforementioned were veſted in theſe purveyors; who in proceſs of time very greatly abuſed their authority, and became a great oppreſſion to the ſubject, though of little advantage to the crown; ready money in open market (when the royal reſidence was more permanent, and ſpecie began to be plenty) being found upon experience to be the beſt proveditor of any. Wherefore, by degrees, the powers of purveyance have declined, in foreign countries as well as our own: and particularly were aboliſhed in Sweden by Guſtavus Adolphus, towards the beginning of the laſt century. And, with us, in England, having fallen into diſuſe during the ſuſpenſion of monarchy, King Charles at his reſtoration, conſented, by the ſame ſtatute, to reſign entirely thoſe branches of his revenue and power: and the parliament, in part of recompenſe, ſettled on him, his heirs, and ſucceſſors, for ever, the hereditary exciſe of 15d. per barrel on all beer and ale ſold in the kingdom, and a proportionable ſum for certain other liquors. So that this hereditary exciſe now forms the ſixth branch of his majeſty's ordinary revenue.

7. A ſeventh branch might alſo be computed to have ariſen from wine-licences; or the rents payable to the crown by ſuch perſons as are licenſed to ſell wine by retail throughout Britain, except in a few privileged places. Theſe were firſt ſettled on the crown by the ſtatute 12 Car. II. c. 25. and together with the hereditary exciſe, made up the equivalent in value for the loſs ſuſtained by the prerogative in the abolition of the military tenures, and the right of pre-emption and purveyance: but this revenue was aboliſhed by the ſtatute 30 Geo. II. c. 19. and an annual ſum of upwards of L. 7000 *per annum*, iſſuing out of the new ſtamp-duties impoſed on wine-licences, was ſettled on the crown in its ſtead. Revenue.

8. An eighth branch of the king's ordinary revenue is uſually reckoned to conſiſt in the profits ariſing from his foreſts. See FOREST. Theſe conſiſt principally in the amercements or fines levied for offences againſt the foreſt-laws. But as few, if any, courts of this kind for levying amercements have been held ſince 1632, 8 Char. I. and as, from the accounts given of the proceedings in that court by our hiſtories and law-books, nobody would wiſh to ſee them again revived, it is needleſs to purſue this inquiry any farther.

9. The profits ariſing from the king's ordinary courts of juſtice make a ninth branch of his revenue. And theſe conſiſt not only in fines impoſed upon offenders, forfeitures of recognizances, and amercements levied upon defaulters; but alſo in certain fees due to the crown in a variety of legal matters, as, for ſetting the great ſeal to charters, original writs, and other forenſic proceedings, and for permitting fines to be levied of lands in order to bar entails, or otherwiſe to inſure their title. As none of theſe can be done without the immediate intervention of the king, by himſelf or his officers, the law allows him certain perquiſites and profits, as a recompenſe for the trouble he undertakes for the public. Theſe, in proceſs of time, have been almoſt all granted out to private perſons, or elſe appropriated to certain particular uſes: ſo that, though our law proceedings are ſtill loaded with their payment, very little of them is now returned into the king's exchequer; for a part of whoſe royal maintenance they were originally intended. All future grants of them, however, by the ſtatute 1 Ann. ſt. 2. c. 7. are to endure for no longer time than the prince's life who grants them.

10. A tenth branch of the king's ordinary revenue, ſaid to be grounded on the conſideration of his guarding and protecting the ſeas from pirates and robbers, is the right to *royal fiſh*, which are whale and ſturgeon: and theſe, when either thrown aſhore, or caught near the coaſts, are the property of the king, on account of their ſuperior excellence. Indeed, our anceſtors ſeem to have entertained a very high notion of the importance of this right; it being the prerogative of the kings of Denmark and the dukes of Normandy; and from one of theſe it was probably derived to our princes.

11. Another maritime revenue, and founded partly upon the ſame reaſon, is that of SHIPWRECKS. See WRECK.

12. A twelfth branch of the royal revenue, the right to mines, has its original from the king's prerogative of coinage, in order to ſupply him with materials; and there-

Revenue. therefore thoſe mines which are properly royal, and to which the king is entitled when found, are only thoſe of ſilver and gold. See MINE.

13. To the ſame original may in part be referred the revenue of treaſure-trove. See *TREASURE-Trove*.

14. Waifs. See WAIF.

15. Eſtrays. See ESTRAY.

Beſides the particular reaſons, given in the different articles, why the king ſhould have the ſeveral revenues of royal fiſh, ſhipwrecks, treaſure-trove, waifs, and eſtrays, there is alſo one general reaſon which holds for them all; and that is, becauſe they are *bona vacantia*, or goods in which no one elſe can claim a property. And, therefore, by the law of nature, they belonged to the firſt occupant or finder; and ſo continued under the imperial law. But, in ſettling the modern conſtitutions of moſt of the governments in Europe, it was thought proper (to prevent that ſtrife and contention which the mere title of occupancy is apt to create and continue, and to provide for the ſupport of public authority in a manner the leaſt burdenſome to individuals) that theſe rights ſhould be annexed to the ſupreme power by the poſitive laws of the ſtate. And ſo it came to paſs, that, as Bracton expreſſes it, "hæc, "quæ nullius in bonis ſunt, et olim fuerunt inventoris "de jure naturali, jam efficiuntur principis de jure gen-"tium."

16. The next branch of the king's ordinary revenue conſiſts in forfeitures of lands and goods for offences; *bona confiſcata*, as they are called by the civilians, becauſe they belonged to the *fiſcus* or imperial treaſury; or, as our lawyers term them, *feria facta*, that is, ſuch where the property is gone away or departed from the owner. The true reaſon and only ſubſtantial ground of all forfeiture for crimes, conſiſts in this; that all property is derived from ſociety, being one of thoſe civil rights which are conferred upon individuals, in exchange for that degree of natural freedom which every man muſt ſacrifice when he enters into ſocial communities. If, therefore, a member of any national community violates the fundamental contract of his aſſociation, by tranſgreſſing the municipal law, he forfeits his right to ſuch privileges as he claims by that contract; and the ſtate may very juſtly reſume that portion of property, or any part of it, which the laws have before aſſigned him. Hence, in every offence of an atrocious kind, the laws of England have exacted a total confiſcation of the moveables or perſonal eſtate; and, in many caſes, a perpetual, in others only a temporary, loſs of the offender's immoveables or landed property; and have veſted them both in the king, who is the perſon ſuppoſed to be offended, being the one viſible magiſtrate in whom the majeſty of the public reſides. See FORFEITURE and DEODAND.

17. Another branch of the king's ordinary revenue ariſes from eſcheats of lands, which happen upon the defect of heirs to ſucceed to the inheritance; whereupon they in general revert to and veſt in the king, who is eſteemed, in the eye of the law, the original proprietor of all lands in the kingdom.

18. The laſt branch of the king's ordinary revenue, conſiſts in the cuſtody of idiots, from whence we ſhall be naturally led to conſider alſo the cuſtody of lunatics. See IDIOT and LUNATIC.

This may ſuffice for a ſhort view of the king's *ordinary* revenue, or the proper patrimony of the crown; Revenue. which was very large formerly, and capable of being increaſed to a magnitude truly formidable: for there are very few eſtates in the kingdom that have not, at ſome period or other ſince the Norman conqueſt, been veſted in the hands of the king, by forfeiture, eſcheat, or otherwiſe. But, fortunately for the liberty of the ſubject, this hereditary landed revenue, by a ſeries of improvident management, is ſunk almoſt to nothing; and the caſual profits, ariſing from the other branches of the *caſus regales*, are likewiſe almoſt all of them alienated from the crown. In order to ſupply the deficiencies of which, we are now obliged to have recourſe to new methods of raiſing money, unknown to our early anceſtors; which methods conſtitute,

II. The king's *extraordinary* revenue. For, the public patrimony being got into the hands of private ſubject, it is but reaſonable that private contributions ſhould ſupply the public ſervice. Which, though it may perhaps fall harder upon ſome individuals, whoſe anceſtors have had no ſhare in the general plunder, than upon others, yet, taking the nation throughout, it amounts to nearly the ſame; provided the gain by the extraordinary ſhould appear to be no greater than the loſs by the ordinary revenue. And perhaps, if every gentleman in the kingdom was to be ſtripped of ſuch of his lands as were formerly the property of the crown, was to be again ſubject to the inconveniences of purveyance and pre-emption, the oppreſſion of foreſt-laws, and the ſlavery of feodal-tenures; and was to reſign into the king's hands all his royal franchiſes of waifs, wrecks, eſtrays, treaſure-trove, mines, deodands, forfeitures, and the like; he would find himſelf a greater loſer than by paying his *quota* to ſuch taxes as are neceſſary to the ſupport of government. The thing, therefore, to be wiſhed and aimed at in a land of liberty, is by no means the total abolition of taxes, which would draw after it very pernicious conſequences, and the very ſuppoſition of which is the height of political abſurdity. For as the true idea of government and magiſtracy will be found to conſiſt in this, that few men are deputed by many others to preſide over public affairs, ſo that individuals may the better be enabled to attend their private concerns; it is neceſſary that thoſe individuals ſhould be bound to contribute a portion of their private gains, in order to ſupport that government, and reward that magiſtracy, which protects them in the enjoyment of their reſpective properties. But the things to be aimed at are wiſdom and moderation, not only in granting, but alſo in the method of raiſing, the neceſſary ſupplies; by contriving to do both in ſuch a manner as may be moſt conducive to the national welfare, and at the ſame time moſt conſiſtent with economy and the liberty of the ſubject; who, when properly taxed, contributes only, as was before obſerved, ſome part of his property in order to enjoy the reſt.

Theſe extraordinary grants are uſually called by the ſynonymous names of *aids*, *ſubſidies*, and *ſupplies*; and are granted by the commons of Great Britain, in parliament aſſembled. See PARLIAMENT and TAX.

The clear nett produce of the ſeveral branches of the revenue, after all charges of collecting and management paid, amounted in the year 1786 to about L. 15,397,000 Sterling, while the expenditure was found

Revenue. found to be about L. 14,477,000. How theſe immenſe ſums are appropriated, is next to be conſidered. And this is, firſt and principally, to the payment of the intereſt of the national debt. See *National Debt* and Funds.

The reſpective produces of the ſeveral taxes were originally ſeparate and diſtinct funds; being ſecurities for the ſums advanced on each ſeveral tax, and for them only. But at laſt it became neceſſary, in order to avoid confuſion, as they multiplied yearly, to reduce the number of theſe ſeparate funds, by uniting and blending them together; ſuperadding the faith of parliament for the general ſecurity of the whole. So that there are now only three capital funds of any account, the *aggregate* fund, and the *general* fund, ſo called from ſuch union and addition; and the *South-Sea* fund, being the produce of the taxes appropriated to pay the intereſt of ſuch part of the national debt as was advanced by that company and its annuitants. Whereby the ſeparate funds, which were thus united, are become mutual ſecurities for each other; and the whole produce of them, thus aggregated, liable to pay ſuch intereſt or annuities as were formerly charged upon each diſtinct fund: the faith of the legiſlature being moreover engaged to ſupply any caſual deficiencies.

The cuſtoms, exciſes, and other taxes, which are to ſupport theſe funds, depending on contingencies, upon exports, imports, and conſumptions, muſt neceſſarily be of a very uncertain amount; but they have always been conſiderably more than was ſufficient to anſwer the charge upon them. The ſurpluſſes, therefore, of the three great national funds, the aggregate, general, and South-Sea funds, over and above the intereſt and annuities charged upon them, are directed by ſtatute 3 Geo. I. c. 7. to be carried together, and to attend the diſpoſition of parliament; and are uſually denominated the *ſinking fund*, becauſe originally deſtined to ſink and lower the national debt. To this have been ſince added many other entire duties, granted in ſubſequent years; and the annual intereſt of the ſums borrowed on their reſpective credits is charged on, and payable out of, the produce of the ſinking fund. However, the nett ſurpluſſes and ſavings, after all deductions paid, amount annually to a very conſiderable ſum. For as the intereſt on the national debt has been at ſeveral times reduced (by the conſent of the proprietors, who had their option either to lower their intereſt or be paid their principal), the ſavings from the appropriated revenues muſt needs be extremely large.

But, before any part of the aggregate fund (the ſurpluſſes whereof are one of the chief ingredients that form the ſinking fund) can be applied to diminiſh the principal of the public debt, it ſtands mortgaged by parliament to raiſe an annual ſum for the maintenance of the king's houſehold and the civil liſt. For this purpoſe, in the late reigns, the produce of certain branches of the exciſe and cuſtoms, the poſt-office, the duty on wine-licences, the revenues of the remaining crown-lands, the profits ariſing from courts of juſtice, (which articles include all the hereditary revenues of the crown), and alſo a clear annuity of L. 120,000 in money, were ſettled on the king for life, for the ſupport of his majeſty's houſehold, and the honour and dignity of the crown. And, as the amount of theſe ſeveral branches was uncertain, (though in the laſt reign they were computed to have ſometimes raiſed almoſt a million), if they did not ariſe annually to L. 800,000, the parliament engaged to make up the deficiency. But his preſent majeſty having, ſoon after his acceſſion, ſpontaneouſly ſignified his conſent that his own hereditary revenues might be ſo diſpoſed of as might beſt conduce to the utility and ſatisfaction of the public, and having graciouſly accepted a limited ſum, the ſaid hereditary and other revenues are now carried into, and made a part of, the aggregate fund; and the aggregate fund is charged with the payment of the whole annuity to the crown. The limited annuity accepted by his preſent majeſty was at firſt L. 800,000, but it has been ſince augmented to L. 900,000. The expences themſelves, being put under the ſame care and management as the other branches of the public patrimony, produce more, and are better collected than heretofore; and the public is a gainer of upwards of L. 100,000 *per annum* by this diſintereſted bounty of his majeſty. Revenue.

The ſinking fund, though long talked of as the laſt reſource of the nation, proved very inadequate to the purpoſe for which it was eſtabliſhed. Miniſters found pretences for diverting it into other channels; and the diminution of the national debt proceeded ſlowly during the intervals of peace, whilſt each ſucceeding war increaſed it with great rapidity. To remedy this evil, and reſtore the public credit, to which the late war had given a conſiderable ſhock, Mr Pitt conceived a plan for diminiſhing the debt by a fund, which ſhould be rendered unalienable to any other purpoſe. In the ſeſſion 1786, he moved that the annual ſurplus of the revenue above the expenditure ſhould be raiſed, by additional taxes, from L. 900,000 to one million Sterling, and that certain commiſſioners ſhould be veſted with the full power of diſpoſing of this ſum in the purchaſe of ſtock (ſee Funds), for the public, in their own names. Theſe commiſſioners ſhould receive the annual million by quarterly payments of L. 250,000, to be iſſued out of the exchequer before any other money, except the intereſt of the national debt itſelf; by theſe proviſions, the fund would be ſecured, and no deficiencies in the national revenues could affect it, but ſuch muſt be ſeparately provided for by parliament.

The accumulated compound intereſt on a million yearly, together with the annuities that would fall into that fund, would he ſaid, in 28 years amount to ſuch a ſum as would leave a ſurplus of four millions annually, to be applied, if neceſſary, to the exigencies of the ſtate. In appointing the commiſſioners, he ſhould, he ſaid, endeavour to chooſe perſons of ſuch weight and character as correſponded with the importance of the commiſſion they were to execute. The ſpeaker of the houſe of commons, the chancellor of the exchequer, the maſter of the rolls, the governor and deputy governor of the bank of England, and the accountant-general of the high court of chancery, were perſons who, from their ſeveral ſituations, he ſhould think highly proper to be of the number.

To the principle of this bill no objection was made, though ſeveral ſpecious but ill-founded ones were urged againſt the ſufficiency of the mode which the chancellor of the exchequer had adopted for the accompliſhment of ſo great and ſo deſirable an end. He had made it a clauſe in his bill, that the accumulating million ſhould never be applied but to the purchaſe of ſtock. To this clauſe Mr Fox objected, and moved that the commiſ-

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ſcribers therein named ſhould be empowered to accept to much of any future loan as they ſhould have cash belonging to the public to pay for. This, he ſaid, would relieve that diſtreſs the country would otherwiſe be under, when, on account of a war, it might be neceſſary to raiſe a new loan: whenever that ſhould be the caſe, his opinion was, that the monies to ariſe not only from taxes ſufficiently productive to pay the intereſt of the loan, but alſo ſufficient to make good to the ſinking fund whatſoever had been taken from it.

If, therefore, for inſtance, at any future period a loan of two millions was propoſed, and there was at that time one million in the hands of the commiſſioners, in ſuch caſe they ſhould take a million of the loan, and the ſcrip or bonds thereupon ſhould be received by them for the public. Thus government would only have five millions to borrow inſtead of ſix; and from ſuch a mode of proceeding, he ſaid, it was evident great benefit would ariſe to the public.

This clauſe was received by Mr Pitt with the ſtrongeſt marks of approbation, as was likewiſe another, moved by Mr Pulteney, enabling the commiſſioners named in the bill to continue purchaſing ſtock for the public when it is above par, unleſs otherwiſe directed by parliament. With theſe additional clauſes the bill was read a third time on the 15th of May, and carried up to the Lords, where it alſo paſſed without meeting with any material oppoſition, and afterwards received the royal aſſent.

The operation of this bill ſurpaſſed perhaps the miniſter's moſt ſanguine expectation. The fund was ably managed, and judiciouſly applied; and in 1793 the commiſſioners had extinguiſhed ſome millions of the public debt. The war, however, into which the nation was that year involved, and of which there is yet no certain proſpect of a near end, has made it neceſſary to borrow additional ſums, ſo large, that many years of peace muſt elapſe before the operation of the fund can contribute ſenſibly to the relief of the people. The clear produce of the taxes raiſed on the people of this country was, in the year 1792, very near L. 17,000,000; and it muſt henceforth, from the accumulation of the debt, and the enormous expence of the preſent war, be neceſſarily rendered greater.

REVENUE, in hunting, a fleſhy lump formed chiefly by a cluſter of whitiſh worms on the head of the deer, ſuppoſed to occaſion the caſting of their horns by gnawing them at the root.

REVERBERATION, in phyſics, the act of a body repelling or reflecting another after its impinging thereon.

REVERBERATION, in chemiſtry, denotes a kind of circulation of the flame by means of a reverberatory furnace.

REVERBERATORY, or *Reverberating Furnace*. See CHEMISTRY-*Index* at *Furnace*, and FURNACE.

REVEREND, a title of reſpect given to eccleſiaſtics.—The religious abroad are called *reverend fathers*, and abbeſſes, prioreſſes, &c. *reverend mothers*. In England, biſhops are *right reverend*, and archbiſhop's *moſt reverend*. In France, before the Revolution, their biſhops, archbiſhops, and abbots, were all alike *moſt reverend*. In Scotland the clergy individually are *reverend*, a fynod is *very reverend*, and the general aſſembly is *venerable*.

REVERIE, the ſame with delirium, raving, or diſtraction. It is uſed alſo for any ridiculous, extravagant imagination, action, or propoſition, a chimera, or viſion. But the moſt ordinary uſe of the word among Engliſh writers, is for a deep diſorderly muſing or meditation.

Reverſal. Reverſal.

REVERSAL *of* JUDGMENT, in law. A judgment may be falſified, reverſed, or voided, in the firſt place, *without a writ of error*, for matters foreign to or *dehors* the record, that is, not apparent upon the face of it; ſo that they cannot be aſſigned for error in the ſuperior court, which can only judge from what appears in the record itſelf; and therefore, if the whole record be not certified, or not truly certified, by the inferior court, the party injured thereby (in both civil and criminal caſes) may allege a diminution of the record, and cauſe it to be rectified. Thus, if any judgment whatever be given by perſons who had no good commiſſion to proceed againſt the perſon condemned, it is void; and may be falſified by ſhewing the ſpecial matter, without writ of error. As, where a commiſſion iſſues to A and B, and twelve others, or any two of them, of which A or B ſhall be one, to take and try indictments; and any of the other twelve proceed without the interpoſition or preſence of either A or B: in this caſe all proceedings, trials, convictions, and judgments, are void for want of a proper authority in the commiſſioners, and may be falſified upon bare inſpection, without the trouble of a writ of error; it being a high miſdemeanour in the judges ſo proceeding, and little (if any thing) ſhort of murder in them all, in caſe the perſon ſo attainted be executed and ſuffer death. So likewiſe if a man purchaſes land of another; and afterwards the vender is, either by outlawry or his own confeſſion, convicted and attainted of treaſon or felony previous to the ſale or alienation; whereby ſuch land becomes liable to forfeiture or eſcheat: now, upon any trial, the purchaſer is at liberty, without bringing any writ of error, to falſify not only the time of the felony or treaſon ſuppoſed, but the very point of the felony or treaſon itſelf; and is not concluded by the confeſſion or the outlawry of the vender, though the vender himſelf is concluded, and not ſuffered now to deny the fact, which he has by confeſſion or ſlight acknowledged. But if ſuch attainder of the vender was by verdict, on the oath of his peers, the alienee cannot be received to falſify or contradict the *fact* of the crime committed; though he is at liberty to prove a miſtake in *time*, or that the offence was committed after the alienation, and not before.

Secondly, a judgment may be reverſed, *by writ of error*, which lies from all inferior criminal juriſdictions to the court of king's-bench, and from the king's-bench to the houſe of peers; and may be brought for notorious miſtakes in the judgment or other parts of the record: as where a man is found guilty of perjury, and receives the judgment of felony, or for other leſs palpable errors; ſuch as any irregularity, omiſſion, or want of form in the proceſs of outlawry, or proclamations; the want of a proper addition to the defendant's name, according to the ſtatute of additions; for not properly naming the ſheriff or other officer of the court, or not duly deſcribing where his county-court was held: for laying an offence, committed in the time of the late king, to be done againſt the peace of the preſent; and for many other ſimilar cauſes, which (though allowed out of tenderneſs to life and liberty) are not much to the credit or advancement of the national juſtice.—Theſe writs of error, to reverſe judgments in caſe of miſ-

Reverſal ‖ Reverſion.

miſdemeanours, are not to be allowed of courſe, but on ſufficient probable cauſe ſhown to the atorney-general; and then they are underſtood to be grantable of common right, and *ex debito juſtitiæ*. But writs of error to reverſe attainders in capital caſes are only allowed *ex gratia*; and not without expreſs warrant under the king's ſign-manual, or at leaſt by the conſent of the attorney-general. Theſe therefore can rarely be brought by the party himſelf, eſpecially where he is attainted for an offence againſt the ſtate: but they may be brought by his heir or executor after his death, in more favourable times; which may be ſome conſolation to his family. But the eaſier and more effectual way is,

Laſtly, to reverſe the attainder by act of parliament. This may be and hath been frequently done upon motives of compaſſion, or perhaps the zeal of the times, after a ſudden revolution in the government, without examining too cloſe into the truth or validity of the errors aſſigned. And ſometimes, though the crime be univerſally acknowledged and confeſſed, yet the merits of the criminal's family ſhall after his death obtain a reſtitution in blood, honours, and eſtate, or ſome or one of them, by act of parliament; which (ſo far as it extends) has all the effect of reverſing the attainder, without caſting any reflections upon the juſtice of the preceding ſentence. See ATTAINDER.

The effect of falſifying or reverſing an outlawry is, that the party ſhall be in the ſame plight as if he had appeared upon the *capias*: and, if it be before plea pleaded, he ſhall be put to plead to the indictment; if, after conviction, he ſhall receive the ſentence of the law; for all the other proceedings, except only the proceſs of outlawry for his non-appearance, remain good and effectual as before. But when judgment, pronounced upon conviction, is falſified or reverſed, all former proceedings are abſolutely ſet aſide, and the party ſtands as if he had never been at all accuſed; reſtored in his credit, his capacity, his blood, and his eſtates: with regard to which laſt, though they be granted away by the crown, yet the owner may enter upon the grantee, with as little ceremony as he might enter upon a diſſeiſor.—But he ſtill remains liable to another proſecution for the ſame offence: for, the firſt being erroneous, he never was in jeopardy thereby.

REVERSE of a medal, coin, &c. denotes the ſecond or back ſide, in oppoſition to the head or principal figure.

REVERSION, in Scots law. See LAW, N° clxix. 1—3.

REVERSION, in the law of England has two ſignifications; the one of which is an eſtate left, which continues during a particular eſtate in being; and the other is the returning of the land, &c. after the particular eſtate is ended; and it is further ſaid to be an intereſt in lands, when the poſſeſſion of it fails, or where the eſtate which was for a time parted with, returns to the granters, or their heirs. But, according to the uſual definition of a reverſion, it is the reſidue of an eſtate left in the granter, after a particular eſtate granted away ceaſes, continuing in the granter of ſuch an eſtate.

The difference between a remainder and a reverſion conſiſts in this, that the remainder may belong to any man except the granter; whereas the reverſion returns to him who conveyed the lands, &c.

Reverſion.

In order to render the doctrine of reverſions eaſy, we ſhall give the following table; which ſhows the preſent value of one pound, to be received at the end of any number of years not exceeding 40; diſcounting at the rate of 5, 4, and 3 *per cent.* compound intereſt.

Years	Value at 5 per ct.	Value at 4 per ct.	Value at 3 per ct.
1	.9524	.9615	.9709
2	.9070	.9245	.9426
3	.8638	.8898	.9151
4	.8227	.8548	.8885
5	.7835	.8219	.8626
6	.7462	.7903	.8375
7	7107	.7599	.8131
8	.6768	.7307	.7894
9	.6446	.7026	.7664
10	.6139	.6756	.7441
11	.5847	.6496	.7224
12	.5568	.6246	.7014
13	.5303	.6006	.6809
14	.5051	.5775	.6611
15	.4810	.5553	.6419
16	.4581	.5339	.6232
17	.4363	.5134	.6050
18	.4155	.4936	.5874
19	.3957	.4746	.5703
20	.3769	.4564	.5537
21	.3589	.4388	.5375
22	.3418	.4219	.5219
23	.3255	.4057	.5067
24	.3100	.3901	.4919
25	.2953	.3757	.4776
26	.2812	.3607	.4637
27	.2678	.3468	.4502
28	.2551	.3335	.4371
29	.2429	.3206	.4243
30	.2314	.3003	.4120
31	.2204	.2965	4000
32	.2099	.2851	.3883
33	.1999	.2741	.3770
34	.1903	.2636	.3660
35	.1813	.2534	.3554
36	.1726	.2437	.3450
37	.1644	.2343	.3350
38	.1566	.2253	.3252
39	.1491	.2166	.3158
40	.1420	.2083	.3066

The uſe of the preceding table.—To find the preſent value of any ſum to be received at the end of a given term of years, diſcounting at the rate of 3, 4, or 5 *per cent.* compound intereſt. Find by the above table the preſent value of 1l. to be received at the end of the given term; which multiply by the number of pounds propoſed, (cutting off four figures from the product on account of the decimals), then the reſult will be the value ſought: For example, the preſent value of 10,000l.

Reversion-ary Annuity. to be received 10 years hence, and the rate of intereſt 5 *per cent.* is equal to .6139×10,000=6139 l. or 61 l. 7 s. Again, the preſent value of 10,000 l. due in ten years, the rate of intereſt being 3 *per cent.* is .7441×10,000=7441.

Reverſed Series, in algebra, a kind of reverſed operation of infinite ſeries. See SERIES.

REVIVIFICATION, in chemiſtry, a term generally applied to the diſtillation of quickſilver from cinnabar.

COMMISSION of REVIEW, is a commiſſion ſometimes granted, in extraordinary caſes, to reviſe the ſentence of the court of delegates, when it is apprehended they have been led into a material error. This commiſſion the king may grant, although the ſtatutes 14 and 25 Hen. VIII. declare the ſentence of the delegates definite: becauſe the pope, as ſupreme head by the canon law, uſed to grant ſuch commiſſion of review; and ſuch authority as the pope heretofore exerted is now annexed to the crown by ſtatutes 26 Hen. VIII. c. 1. and 1 Eliz. c. 1. But it is not matter of right, which the ſubject may demand *ex debito juſtitiæ*; but merely a matter of favour, and which therefore is often denied.

REVIEW, is the drawing out all or part of the army in line of battle, to be viewed by a governor, or a general, that they may know the condition of the troops.

At all reviews, the officers ſhould be properly armed, ready in their exerciſe, ſalute well, in good time, and with a good air; their uniform genteel, &c. The men ſhould be clean and well dreſſed; their accoutrements well put on; very well ſized in their ranks; the ſerjeants expert in their duty, drummers perfect in their beatings, and the fifers play correct. The manual exerciſe muſt be performed in good time, and with life; and the men carry their arms well; march, wheel, and form with exactneſs. All manœuvres muſt be performed with the utmoſt regularity, both in quick and ſlow time. The firings are generally 36 rounds; viz. by companies; by grand diviſions; by ſub-diviſions; obliquely, advancing, retreating; by files; in the ſquare; ſtreet firings, advancing, and retreating; and laſtly, a volley. The intention of a review is, to know the condition of the troops, ſee that they are complete and perfect in their exerciſes and evolutions well.

REVIEW is alſo applied to Literary Journals, which give a periodical view of the ſtate of literature;—as the Monthly Review, the Critical Review, the Britiſh Critic, and Analytical Review, &c.

RE-UNION ISLAND, an iſland in the South Sea, diſcovered by the French on the 16th December 1773; lying, according to M. de Pages, in latitude 48° 21″ and longitude 69° 42′, the variation of the needle being 19° 30′ eaſterly towards north-weſt. The road and harbour are extremely good, and the latter from 16 to 8 fathoms deep at the very ſhore. The coaſt on each ſide is lofty, but green, with an abrupt deſcent, and ſwarms with a ſpecies of land-crab. The penguins and ſea-lions, which ſwarmed on the ſands, were nowiſe alarmed at the approach of thoſe who landed; from whence M. de Pages concluded that the country was wholly uninhabited. The ſoil produces a kind of graſs, about five inches long, with a broad black leaf, and ſeemingly of a rich quality—but there was no veſtige of a tree or human habitation. See *Travels round the World* by M. de Pages, Vol. III. chap. viii. and ix. Revolution

REVOLUTION, in politics, ſignifies a change in the conſtitution of a ſtate; and is a word of different import from *revolt*, with which it is ſometimes confounded. When a people withdraw their obedience from their governors for any particular reaſon, without overturning the government, or waging an offenſive war againſt it, they are in a ſtate of revolt; when they overturn the government and form a new one for themſelves, they effect a *revolution*. 1 Definition.

That which is termed *the revolution* in Britain is the change which, in 1688, took place in conſequence of the forced abdication of king James II. when the Proteſtant ſucceſſion was eſtabliſhed, and the conſtitution reſtored to its primitive purity. Of this important tranſaction, which confirmed the rights and liberties of Britons, we have endeavoured to give an impartial account under another article (ſee BRITAIN, n° 281, &c.). 2 Britiſh Revolution.

Of the riſe and progreſs of the American revolution, which is ſtill freſh in the memory of our readers, a large detail is given under the article AMERICA: But there are two other revolutions yet pending, of which ſome account will be expected in this place. 3 American.

The Poliſh revolution, which, in all its circumſtances, was perhaps the leaſt exceptionable of any in the records of hiſtory, we have already traced to the period when the amiable king, overawed by the arms of Ruſſia, was obliged to undo his patriotic work, and give his ſanction to the reſtoration of the old and wretched government (ſee POLAND). Since that period, Koſciuſko's army has been completely defeated, himſelf made a priſoner, Warſaw taken, and the whole kingdom ſubdued by the powers combined againſt it. What will be the conſequences of this ſucceſs may perhaps be conceived, but the rumours of the day are various. At one time we are told, that Poland is to be no longer an independent ſtate, but to be divided among the three great powers which formerly wreſted from it ſome of its moſt valuable provinces. At another time, we hear of the diſintereſted intention of the Empreſs, to reſtore the king to his original authority; although ſhe has, in the mean time, driven him from his capital, where ſhe herſelf exerciſes ſovereign power. And a third report ſays, that Staniſlaus is to retire with a large penſion, and a Ruſſian prince to ſtep into his throne. The firſt of theſe rumours we think much more probable than the other two: eſpecially as it ſeems confirmed by the following letter ſent from Grodno, on the 18th of January, by the unfortunate king to the Britiſh ambaſſador. 4 Poliſh.

"MY DEAR GARDINER—The characters with which you and I have been inveſted ſeem to be now almoſt at an end. I do not expect to ſee you again, but it is of importance to me to bid you farewell; and this I do from the bottom of my heart. You will preſerve a place in my heart till death; and I hope that at laſt we ſhall meet again, in a place where upright minds, according to my opinion, will be for ever united.

"Every thing belonging to the uſual etiquette has been ſo much deranged and interrupted by my bad fate, that moſt probably neither you nor I will be able to fulfil the diplomatic cuſtoms.

"But be aſſured, that I love and honour your king and

Revolution and nation. This you will apprize them of. Be assured also, that I wish you should preserve an affection towards your friend. If I am able to speak to you no more, my picture will speak to you for me! (Signed) STANISLAUS AUGUSTUS, KING."

This shows, at least, the fate of the king; and leaving that of the kingdom to be ascertained by time, we proceed to fulfil a promise which we made respecting another revolution, to which all the nations of Europe are still looking with anxiety and alarm.

5 French. When treating of France under a former article, we stated a few of the more striking historical facts which led to the commencement of the revolution; and we now come to trace the series of transactions which have marked its terrible career. In doing this, we shall compress our ideas as much as possible; and out of the endless variety of materials of which the public are in possession, we shall endeavour to extract a short and, if possible, a tolerably clear detail. For this purpose, however, it will be necessary that we begin, by stating the internal situation of France at the period immediately preceding the revolution, along with the more obvious political circumstances which contributed to the production of that event. The moral history of man is always more important than the mere recital of any physical occurrences that may take place in his lot. It is not the fall of a mighty monarch and the dispersion of his family; it is not the convulsion of empires, and the oceans of human blood which have been shed, that render the French revolution peculiarly interesting. Such events, however deplorable, are far from being without example in the history of mankind. In the populous regions of the east, where superstition and slavery have always prevailed, they are regarded as forming a part of the ordinary course of human affairs; because an intrepid and skilful usurper finds it easy to intimidate or ensnare millions of weak and credulous men. In Europe the case is very different; no adventurer can advance far without encountering thousands as artful and as daring as himself. Events are not the result either of blind hazard or of individual skill; conspiracies or plots produce little effect. Like other arts, the art of government has been brought to much perfection; and an established constitution can only be shaken by the strong convulsion produced by national passions and efforts. The wonderful spectacle which we are now to contemplate, is that of a mild and polished people becoming in an instant sanguinary and fierce; a well established government, celebrated for its dexterity and skill, overturned almost without a struggle; a whole nation apparently uniting to destroy every institution which antiquity had hallowed or education taught them to respect; a superstitious people treating the religion of their fathers with contempt; a long enslaved people, whose very chains had become dear to them, occupied in their public counsels in the discussion of refined, and even visionary schemes of freedom: in short, 25,000,000 of persons suddenly treading under foot every sentiment and every prejudice that they themselves had once regarded as sacred and venerable.

6 France was formerly under a barbarous aristocracy. Like the other nations of Europe, France was anciently governed by a barbarous aristocracy, whose different members were feebly united by the authority of a succession of kings destitute of power or influence. The nobles, within their own territories, enjoyed privileges entirely royal: they made peace and war; they coined money; they were judges in the last resort; their vassals were their slaves, whom they bought and sold along with the lands; the inhabitants of cities, although freemen, were depressed and poor, depending for protection upon some tyrannical baron in their neighbourhood. At length, however, by the progress of the arts, the cities rose into considerable importance, and their inhabitants, along with such freemen of low rank as resided in the country, were considered as entitled to a representation in the states-general of the kingdom, under the appellation of *tiers etat*, or *third estate*; the clergy and the nobles forming the two first estates. But the sovereign, having speedily become despotic, the meetings of the states general were laid aside. This absolute authority, on the part of the crown, was not acquired, as it was in England by the house of Tudor, by abolishing the pernicious privileges of the nobles and elevating the commons; but by skilful encroachments, by daring exertions of prerogative, and the use of a powerful military force. In France, therefore, the monarch was absolute, yet the nobles retained all their feudal privileges, and the ecclesiastical hierarchy did the same. The following was, in a few words, the state of that country during these two last centuries. Revolution

7 Was never reduced into one homogeneous mass. The kingdom of France, previous to the revolution, was never reduced to one homogeneous mass. It consisted of a variety of separate provinces acquired by different means; some by marriage, some by legacy, and others by conquest. Each province retained its ancient laws and privileges, whether political or civil, as expressed in their capitularies or conditions by which they were originally acquired. In one part of his dominions the French monarch was a count, in another he was a duke, and in others he was a king; the only bond which united his vast empire being the strong military force by which it was overawed. Each province had its barriers; and the intercourse betwixt one province and another was often more restrained by local usages than the intercourse of either with a foreign country. Some of the provinces, such as Bretagne and Dauphiné, even retained the right of assembling periodically their provincial states; but these formed no barrier against the power of the court.

8 The clergy formed the first estate in the kingdom, The clergy formed the first estate in point of precedence. They amounted to 130,000. The higher orders of them enjoyed immense revenues; but the *curés* or great body of acting clergy seldom possessed more than about L.28 Sterling a-year, and their *vicaires* about half that sum. A few of their dignified clergy were men of great piety, who resided constantly in their dioceses, and attended to the duties of their office; but by far the greater number of them passed their lives at Paris and Versailles, immersed in all the intrigues and dissipation of a gay and corrupted court and capital. They were almost exclusively selected from among the younger branches of the families of the most powerful nobility, and accounted it a kind of dishonour to the order of bishops for any person of low rank to be admitted into it. The lower clergy, on the contrary, were persons of mean birth, and had little chance of preferment. At the same time, we find several respectable exceptions to this last rule. The clergy, as a body, independent of the tithes, possessed a revenue arising from their property in land, amounting

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[illegible] of the kingdom annually; at the same time that it was exempted from [illegible]. The crown had at different times attempted to break through this privilege. To avoid the danger, the clergy presented to the court a free gift of a certain money somewhat short of a million Sterling every five years.

9 Nobility of the second order.

This order was in reality the second order of the state, but it was in reality the first. The nobles amounted to no less than 80,000 in number. The title and rank descended to all the children of the family, but the property to the eldest alone; hence vast multitudes of them were dependent upon the bounty of the court. They regarded the useful and commercial arts as dishonourable, and even the liberal professions of the law and physic as in a great measure beneath their dignity, disdaining to intermarry with the families of their professors. The feudal system in its purity was extremely favourable to the production of respectable qualities in the minds of those who belonged to the order of the nobles; but the introduction of commerce has rendered its decline equally unfavourable to that class of men. Instead of the ancient patriarchal attachment between the feudal chieftain and his vassals, the nobility had become greedy landlords in the provinces, that they might appear in splendor at court and in the capital. There, lost in intrigue, sensuality, and vanity, their characters became frivolous and contemptible. Such of the French noblesse, however, as remained in the provinces, regarded with indignation this degradation of their order, and still retained a proud sense of honour and of courage, which has always rendered them respectable. The order of the nobles was exempted from the payment of taxes, although the property of some of them was immense. The estates of the prince of Conde, for example, were worth L. 200,000 a year, and those of the duke of Orleans nearly twice as much. The crown had indeed imposed some trifling taxes upon the noblesse, which, however, they in a great measure contrived to elude.

10 The parliaments.

Next to the nobles, and as a privileged order possessing a secondary kind of nobility of their own, we may mention the parliaments. These were large bodies of men, in different provinces, appointed as courts of law for the administration of justice. In consequence of the corruption of the officers of state, the members purchased their places, which they held for life; but the son was usually preferred when he offered to purchase his father's place. In consequence of this last circumstance, the practising lawyers had little chance of ever becoming judges. Courts thus constituted consisted of a motley mixture of old and young, learned and ignorant, men. Justice was ill administered. The judges allowed their votes in depending causes to be openly solicited by the parties or their friends. No wise man ever entered into a litigation against a member of one of these parliaments; no lawyer would undertake to plead his cause; it never came to a successful issue, and usually never came to any issue at all. After the states-general had fallen into disuse, the parliaments acquired a certain degree of political consequence, and formed the only check upon the absolute power of the crown. The laws, or royal edicts, before being put in force, were always sent to be registered in the books of the parliaments. Taking advantage of this, in favourable times and circumstances, they often delayed or refused to register the royal edicts, and presented remonstrances against them. This was done under a kind of legal fiction: for they pretended that the obnoxious edict being injurious to the public happiness, could not be the will of the king, but must either be a forgery or an imposition by the ministers. These objections were got the better of, either by a positive order from the king, or by his coming in person and ordering the edict to be registered. The parliaments, however, often carried their opposition very far, even to the ruin of themselves and their families as individuals. This rendered them extremely popular with the nation, and enabled them to embarrass a weak administration. After all, however, the opposition of the parliaments was so feeble, that it was never thought worth while to abolish them entirely till towards the end of the reign of Louis XV. but they were restored as a popular measure at the beginning of the reign of Louis XVI.

11 And the commons or tiers etat the lowest order. Oppressive burdens on the commons.

The *tiers etat*, or commons, formed the lowest order of the state in France, and they were depressed and miserable in the extreme. To form a conception of their situation, it is necessary to observe that they bore the whole pecuniary burdens of the state: They alone were liable to taxation. An expensive and ambitious court; an army of 200,000 men in time of peace, and of twice that number in war; a considerable marine establishment, public roads and works, were all supported exclusively by the lowest of the people. To add to the evil, the revenues were ill collected. They were let out to farmers-general at a certain sum, over and above which they not only acquired immense fortunes to themselves, but were enabled to advance enormous presents to those favourites or mistresses of the king or the minister, by means of whom they procured their places. To raise all this money from the people, they were guilty of the cruellest oppression, having it in their power to obtain whatever revenue laws they pleased, and executing them in the severest manner. For this last purpose they kept in pay an army of clerks, subalterns, scouts, and spies, amounting to 80,000 men. These men were indeed detested by the king, whom they deceived and kept in poverty; by the people, whom they oppressed; and by the ancient nobility, as purse-proud upstarts. But the court of France could never contrive to manage without them. The peasants could be called out by the intendants of the privinces in what they called *corvées* to work upon the high roads for a certain number of days in the year, which was a source of severe oppression, as the intendant had the choice of the time and place of their employment, and was not bound to accept of any commutation in money. They were moreover subject to the nobles in a thousand ways. The nobles retained all their ancient manerial or patrimonial jurisdictions. The common people being anciently slaves, had obtained their freedom upon different conditions. In many places they and their posterity remained bound to pay a perpetual tribute to their feudal lords. Such tributes formed a considerable part of the revenue of many of the provincial nobles. No man could be an officer of the army, by a late regulation, who did not produce proofs of nobility for four generations. The parliaments, although originally of the *tiers etat*, attempted also to introduce a rule that none but the noblesse should be admitted into their order. In such a situation, it will not be accounted surprising that the common people of France were extremely superstitious

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tious and ignorant. They were, however, paſſionately devoted to their monarch, and whatever concerned him. In 1754, when Louis XV. was taken ill at Metz, the whole nation was truly in a kind of deſpair. The courier and his horſe that brought the news of his recovery to Paris were both almoſt ſuffocated by the embraces of the people.

12 Deſpotic power of the king.

We have ſaid that the French monarch was deſpotic. His power was ſupported by his army and by a watchful police, having in pay an infinite hoſt of ſpies and other ſervants. In France no man was ſafe. The ſecrets of private families were ſearched into. Nothing was unknown to the jealous inquiſition of the police. Men were ſeized by *lettres de cachet* when they leaſt expected it, and their families had no means of diſcovering their fate. The ſentence of a court of law againſt a nobleman was uſually reverſed by the miniſter. No book was publiſhed without the licence of a cenſor-general appointed by the court, and the miniſter was accountable to none but the king. No account was given of the expenditure of the public money. Enormous gratifications and penſions were given as the reward of the moſt infamous ſervices. The ſupreme power of the ſtate was uſually lodged with a favourite miſtreſs, and ſhe was ſometimes a woman taken from public proſtitution. This was not indeed the caſe under Louis XVI. but it was nevertheleſs one of the misfortunes of his life that he was far from being abſolute in his own family. Still, however, with all its faults, the French court was the moſt ſplendid and poliſhed in Europe. It was more the reſort of men of talents and literature of every kind, and there they met with more ample protection, than anywhere elſe. The court was often jealous of their productions, but they met with the moſt diſtinguiſhed attention from men of fortune and rank; inſomuch that for a century paſt the French have given the law to Europe in all queſtions of taſte, of literature, and of every polite accompliſhment. The gay elegance that prevailed at court diffuſed itſelf through the nation; and amidſt much internal miſery, gave it to a foreigner the appearance of happineſs, or at leaſt of levity and vanity.

13 Splendour of the court, &c.

14 Cauſes of the Revolution.

Such as it was, this government had ſtood for ages, and might have continued, had not a concurrence of cauſes contributed to its overthrow. The inferior orders of clergy, excluded from all chance of preferment, regarded their ſuperiors with jealouſy and envy, and were ready to join the laity of their own rank in any popular commotion. The inferior provincial nobleſſe beheld with contempt and indignation the vices and the power of the courtiers, and the higher nobility wiſhed to diminiſh the power of the crown. The practiſing lawyers, almoſt entirely excluded from the chance of becoming judges, wiſhed eagerly for a change of affairs, not doubting that their talents and profeſſional ſkill would render them neceſſary amidſt any alterations that could occur. Accordingly, they were the firſt inſtruments in producing the revolution, and have been its moſt active ſupporters. The monied intereſt wiſhed eagerly for the downfal of the ancient nobility. As for the great maſs of the common people, they were too ignorant, too ſuperſtitiouſly attached to old eſtabliſhments, and too much depreſſed, to have any conception of the nature of political liberty, or any hope of obtaining it. We have already ſtated the leading circumſtances which led to the French revolution (ſee FRANCE, n° 184, &c.); but there were other circumſtances which contributed in an equal degree both to its commencement and its progreſs.

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For 40 years the principles of liberty had been diſſeminated with eagerneſs in France by ſome men of great talents, as Rouſſeau, Helvetius, and Raynal, to whom the celebrated Monteſquieu had led the way. Beſides theſe, there was in France a vaſt multitude of what were called *men of letters*, or perſons who gave this account of the manner in which they ſpent their time. All theſe were deeply engaged on the ſide of ſome kind of political reform. The men of letters in Paris alone are ſaid to have amounted to 20,000. One of the laſt acts of the adminiſtration of the archbiſhop of Thouloufe was, on the 5th July 1788, to publiſh a reſolution of the king in council, inviting all his ſubjects to give him their advice with regard to the ſtate of affairs. This was conſidered as a conceſſion of an unlimited liberty of the preſs; as it is ſcarcely poſſible to form an idea of the infinite variety of political publications which from that period diffuſed among the people a diſſatisfaction with the order of things in which they had hitherto lived.

The eſtabliſhed religion of France had for ſome time paſt been gradually undermined. It had been ſolemnly aſſaulted by philoſophers in various elaborate performances; and men of wit, among whom Voltaire took the lead, and attacked it with the dangerous weapon of ridicule. The Roman Catholic religion is much expoſed in this reſpect, in conſequence of the multitude of falſe miracles and legendary tales with which its hiſtory abounds. Without diſcriminating betwixt the reſpectable principles on which it reſts, and the ſuperſtitious follies by which they had been defaced, the French nation learned to laugh at the whole, and rejected inſtead of reforming the religion of their fathers. Thus the firſt order in the ſtate had already begun to be regarded as uſeleſs, and the minds of men were prepared for important changes.

The immenſe population of the city of Paris, amounting to upwards of 800,000 ſouls, rendered it an important engine in the hands of the conductors of the revolution. An overgrown capital has always proved dangerous to a government that is or attempts to be deſpotic, as appears from the hiſtory of ancient Babylon and Rome, as well as of modern Conſtantinople, of London under Charles I. and Paris under ſeveral of its kings.

We cannot here avoid mentioning a phyſical event, which aſſiſted not a little in producing many of the convulſions attending the revolution, a general ſcarcity of grain, which occurred about that period. On Sunday the 13th of July 1788, about nine in the morning, without any eclipſe, a dreadful darkneſs ſuddenly overſpead ſeveral parts of France. It was the prelude of ſuch a tempeſt as is unexampled in the temperate climates of Europe. Wind, rain, hail, and thunder, ſeemed to contend in impetuoſity; but the hail was the great inſtrument of ruin. Inſtead of the rich proſpects of an early autumn, the face of nature in the ſpace of an hour preſented the dreary aſpect of univerſal winter. The ſoil was converted into a moraſs, the ſtanding corn beaten into the quagmire, the vines broken to pieces, the fruit trees demoliſhed, and unmelted hail lying in heaps like rocks of ſolid ice. Even the robuſt

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forest trees were unable to withstand the fury of the tempest. The hail was composed of enormous, solid, and angular piece of ice, some of them weighing from eight to ten ounces. The country people, beaten down in the fields on their way to church, amidst this concussion of the elements, concluded that the last day was arrived; and scarcely attempting to extricate themselves, lay despairing and half suffocated in or at the water and the mud, expecting the immediate dissolution of all things. The storm was irregular in its devastations. While several rich districts were laid entirely waste, some intermediate portions of country were comparatively little injured. One of 60 square leagues had not a single ear of corn or a fruit of any kind left. Of the 665 parishes in the district of Pontoise, 43 were entirely desolated, and of the remaining 23 some lost two-thirds and others half their harvest. The isle of France, being the district in which Paris is situated, and the Orleannois, appear to have suffered chiefly. The damage there, upon a moderate estimate, amounted to 80,000,000 of livres, or between three and four millions Sterling. Such a calamity must at any period have been severely felt; but occuring on the eve of a great political revolution, and amidst a general scarcity throughout Europe, it was peculiarly unfortunate, and gave more embarrassment to the government than perhaps any other event whatever. Numbers of families found it necessary to contract their mode of living for a time, and to dismiss their servants, who were thus left destitute of bread. Added to the public discontent and political dissensions, it produced such an effect upon the people in general, that the nation seemed to have changed its character; and instead of that levity by which it had ever been distinguished, a settled gloom now seemed fixed on every countenance.

15 Attempt to reduce the power of the crown in spring 1789.

The spring of the year 1789 was a period of much political anxiety in France. The superior orders wished to reduce the power of the crown, but were jealous of their own privileges, and determined to retain them; while the popular philosophers and others were endeavouring to render them odious, and to rouse the people to a love of freedom. Still, however, the great body of the common people remained careless spectators of the struggle and unconscious of the approaching commotion. Such was their indifference, that few of them took the trouble even to attend and vote at the elections of the deputies to the states-general. In many places, where a thousand voters were expected, not fifty came forward; but such of them as did appear showed that a seed was sown which might one day rise into important fruits. In the instructions which they gave to their deputies, the French constitution was in general the model of what they wished their government to be. They demanded equal taxation, the abolition of *lettres de cachet* or arbitrary imprisonment, the responsibility of ministers, and the extinction of the feudal privileges of the nobles; but they wished that the whole three orders of the state should sit and vote in one house, well knowing that their nobility were not prepared to act the moderate part of the British house of lords. The nobles, on the contrary, although willing to renounce some of their pecuniary privileges, and to further the power of the crown, were most decisively resolved neither to surrender their feudal prerogatives nor the right of sitting in three separate assemblies; by means of which each of the orders could easily resist the encroachment of the other two. Mr Neckar has been improperly censured for not deciding this last important question previous to the meeting of the states-general: but it must be observed, that the very purpose of calling that assembly was to overturn the unjust privileges of the higher orders through its medium, and without any direct interposition on the part of the ministers. Had the king positively decided in favour of three chambers, the nobles and the clergy would have retained all those ancient abuses established in their own favour, of which it was his with to deprive them, and the crown and its prerogatives would have been the only objects of sacrifice. It was therefore thought safer to leave the *tiers état* to fight its own battle: nor was it yet imagined that the commons of France, depressed and poor, and dispersed by situation over a multitude of provinces, could ever unite in enterprises dangerous to the sovereign.

13 States summoned to meet at Versailles.

The states had been summoned to meet at Versailles on the 27th of April, and most of the deputies arrived at that time; but the elections for the city of Paris not being concluded, the king deferred the commencement of their sessions till the 4th of May. During this period, the members, left in idleness, began to find out and form acquaintance with each other. Among others, a few members from Brittany (Bretagne) formed themselves into a club, into which they gradually admitted many other deputies that were found to be zealous for the popular cause, and also many persons who were not deputies. This society, thus originally established at Versailles, was called the *Comité Breton*; and was one day destined, under the appellation of the *Jacobin Club*, to give laws to France, and to diffuse terror and alarm throughout Europe. On the other side, the aristocratic party established conferences at the house of Madame Polignac, for the purpose, it is said, of uniting the nobles and the clergy.

17 A popular riot in the suburb of St Antoine.

An event occurred at this time which all parties ascribed to some malicious motive. In the populous suburb of St Antoine, a M. Reveillon carried on a great paper manufactory. A false report was spread that he intended to lower the wages of his workmen, and that he had declared bread was too good for them, and that they might subsist very well on potato-flour. A commotion was raised, he was burnt in effigy, and his house was thereafter burnt and pillaged by the mob, who were not dispersed till the military had been called in, and much carnage ensued. The popular party asserted that the commotion had been artfully excited by the party of the queen and the Count D'Artois, to afford a pretence for bringing great bodies of the military to the neighbourhood to overawe the states-general, or induce the king more decisively to resolve on assembling that body at Versailles, in preference to Paris, where they and the popular minister M. Neckar wished it to be held.

18 The States General commence business at Versailles.

On the 4th of May the states-general assembled at Versailles. They commenced business by going in a solemn procession, preceded by the clergy, and followed by the king, according to ancient custom, to church, to perform an act of devotion. The nobles were arrayed in a splendid robe, and they and the higher clergy glittered in gold and jewels. The commons appeared in black, the dress belonging to the law. The

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assembly was thereafter opened by a short speech from the throne, in which the king congratulated himself upon thus meeting his people assembled; alluded to the national debt, and the taxes, which were severely felt because unequally levied; he took notice of the general discontent and spirit of innovation which prevailed, but declared his confidence in the wisdom of the assembly for remedying every evil. "May an happy union (added he) reign in this assembly; and may this epocha become ever memorable for the happiness and prosperity of the country. It is the wish of my heart; it is the most ardent desire of my prayers; it is, in short, the price which I expect from the sincerity of my intentions and my love for my people."

M. Barretin, the keeper of the seals, next addressed the assembly in a congratulatory and uninteresting speech. He was followed by the popular minister M. Neckar, who spoke for three hours. Though much applauded on account of the clear financial details which his speech contained, he encountered a certain degree of censure from all parties, on account of the cautious ambiguity which he observed with regard to the future proceedings of the states-general.

19 Their debates and inactivity.

Next day the three orders assembled separately. The deputies of the *tiers etat* amounted to 600 in number, and those of the nobles and clergy to 300 each. During their first sittings much time was spent in unimportant debates about trifling points of form; but the first important question, that necessarily became the subject of their discussion, was the *verification of their powers*, or production of the commissions of the members, and investigation of their authenticity. The commons *(tiers etat)* laid hold of this as a pretext for opening the grand controversy, whether the states-general should sit in one or in three separate chambers? They sent a deputation inviting the nobles and the clergy to meet along with them in the common hall for the purpose of *verifying their powers* in one common assembly. In the chamber of the clergy 114 members voted for the performance of this ceremony in the general assembly; and 133 against it. But in the more haughty order of the nobles, the resolution for the verification in their own assembly was carried by a majority of 188 against 47. The commons paid no regard to this. They were conducted by bold and skilful leaders, who discerned the importance of the point in contest, and resolved not to abandon it. Aware of the exigencies of the state, they knew that the crown was nearly verging upon bankruptcy; and that such were the deficiencies of the revenue that only a short delay was necessary to accomplish the absolute dissolution of the government. They suffered five weeks to pass away therefore in total inactivity. During this period propofals were made on the part of the ministry for a pacification between the three orders, and conferences were opened by commissioners from each. But no art could seduce the commons from their original purpose, or prevail with them to enter upon the business of the state.

20 Popularity of the Tiers Etat or commons.

The nation had expected much from the assembling of the states-general, and learnt the news of their inaction with no small degree of concern. The *tiers etat* was naturally popular, and the public censure could not readily devolve upon that favourite order. Moreover from the first period of their assembling the commons made every effort to augment their own natural popularity. They admitted all persons promiscuously into the galleries, and even into the body of their hall. No restraint was attempted to be laid upon the most vehement marks of popular applause or censure. Lists of the voters names were publicly taken and sent to Paris upon every remarkable occasion; and the members suddenly found themselves become, according to their political sentiments, the objects of general execration or applause. The new and bold notions of liberty that were daily advanced by the leaders of the *tiers etat* were received with acclamation by their hearers. The capital became interested in the issue of every debate; and the political fervor was eagerly imbibed by the nation with that vivacity which is so peculiar to the French. The commons accused the nobles of obstinately impeding the business of the state, by refusing to verify their powers in one common assembly. The accusation was swallowed by the multitude, who saw not, or were unwilling to see, that the attack was made by their own favourite order. In the mean time the nobles became rapidly more and more unpopular. Their persons were insulted, new publications daily came forth, and were greedily bought up, which reviled their whole order, and represented them as an useless or pernicious body of men, whose existence ought not to be tolerated in a free state. Whoever adhered to them was branded with the odious appellation of *Aristocrate*. The clergy, from the influence of the parish *curés* or parsons, seemed ready to desert their cause They were ever opposed by a minority of their own body, which derived lustre from having at its head the duke of Orleans, the first prince of the blood. Still, however, the majority of the nobles remained firm; well aware, that if they once consented to sit in the same assembly, and to vote promiscuously, with the ambitious and more numerous body of the commons, their whole order, and all its splendid privileges, must speedily be overthrown.

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21 Taking advantage of this popularity, they seize the legislative authority;

The leaders of the commons saw the change that was taking place in the minds of men; and they at length regarded the period as arrived when they ought to emerge from their inactivity, and execute the daring project of seizing the legislative authority in their country. They declared that the representatives of the nobles and the clergy were only the deputies of particular incorporations whom they would allow to sit and vote along with themselves; but who had no title in a collective capacity to act as the legislators of France. For conducting business with more facility, they appointed 20 committees. In consequence of a proposal by the Abbé Sieyes, a final message was sent to the privileged orders requiring their attendance as individuals, and intimating that the commons, as the deputies of 96 out of every hundred of their countrymen, were about to assume the exclusive power of legislation. None of the nobles obeyed this summons; but three curés, Messrs Cesve, Ballard, and Jalot, presented their commissions, and were received with loud acclamations. They were next day followed by five more, among whom were Messrs Gregoire, Dillon, and Bodineau. After some debate concerning the appellation which they ought to assume, the commons, with such of the clergy as had joined them, solemnly voted themselves the sovereign legislators of their country under the name of the *National Assembly*. The result of the vote was no sooner declared, than the hall resounded

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with ſhouts from the immenſe concourſe of ſpectators of "Vive le Roi et vive l'aſſemblé nationale," *Long live the king and the national aſſembly*. M. Bailly was choſen preſident for four days only, Meſſrs Camus and Pſon de Gramd ſecretaries, and the aſſembly proceeded to buſineſs.

22 And aſſert their own ſovereignty.

Its firſt acts were deciſively expreſſive of its own ſovereignty. All taxes impoſed without the conſent of the repreſentatives of the people were declared to be null and void; but a temporary ſanction was given to the preſent taxes, although illegal, till the diſſolution of the aſſembly and no longer. It was added, that "as ſoon as, in concert with his majeſty, the aſſembly ſhould be able to fix the principles of national regeneration, it would take into conſideration the *national debt*, placing from the preſent moment the creditors of the ſtate under the ſafeguard and honour of the French *nation*."

23 Majority of the clergy unite with them.

The popular cauſe now gained ground ſo faſt, that on the 19th of June a majority of the clergy voted for the verification of their powers in common with the national aſſembly, and they reſolved to unite with them on the following day.

24 Fears of the nobles.

Affairs were now come to a criſis, and the nobles perceived that they muſt inſtantly make a deciſive ſtand, or yield up their cauſe as finally loſt. Such was their alarm, that M. d'Eſpremenil propoſed, at one of the ſittings of their order, to addreſs the king, intreating him to diſſolve the ſtates-general. Hitherto that prince had gone along with M. Neckar in favouring the popular cauſe in oppoſition to the ariſtocracy. But every art was now uſed to alarm his mind upon the ſubject of the late aſſumptions of power on the part of the commons, and theſe arts were at length ſucceſsful. Repeated counſels were held; M. Neckar was abſent attending a dying ſiſter, and the king was prevailed upon to act agreeably to the advice of the leaders of the nobles. But the firſt meaſure which they adopted was ſo ill conducted as to afford little proſpect of final ſucceſs to their cauſe. On the 20th of June, when the preſident and members were about to enter as uſual into their own hall, they found it unexpectedly ſurrounded by a detachment of the guards, who refuſed them admiſſion, while the heralds at the ſame time proclaimed a royal ſeſſion. Alarmed by this unforeſeen event, the meaning of which they knew not, but apprehending that an immediate diſſolution of the aſſembly was deſigned, they inſtantly retired to a neighbouring tennis-court, where, in the vehemence of their enthuſiaſm, they took a ſolemn oath "never to ſeparate till the conſtitution of their country ſhould be completed."

25 Royal ſeſſion proclaimed.

On the 22d a new proclamation intimated that the royal ſeſſion was deferred till the following day. It was now found that the aſſembly had been excluded from their hall merely becauſe the workmen were occupied in preparing it for the intended ſolemnity. This information was ill calculated to excite favourable expectations of the meaſures about to be adopted at a royal ſeſſion, uſhered in by ſuch circumſtances of marked diſreſpect for the repreſentatives of the people. The aſſembly, after wandering about in ſearch of a place of meeting, at length entered the church of St Louis, and were immediately joined by the majority of the clergy, with their preſident, the archbiſhop of Vienne, at their head. Two nobles of Dauphine, the marquis de Blacons and the count d'Agoult, preſented their commiſſions at the ſame time. Encouraged by theſe events, and by the applauſes of ſurrounding multitudes, the aſſembly now expected with firmneſs the meaſures about to be adopted.

26 The aſſembly meet in the church of St Louis.

27 Diſcourſe of the king

The royal ſeſſion was held in the moſt ſplendid form, but altogether in the ſtyle of the ancient deſpotiſm. Soldiers ſurrounded the hall. The two ſuperior orders were ſeated, while the repreſentatives of the people, left ſtanding a full hour in the rain, were in no humour, when at laſt admitted, to receive with much complacency the commands of their ſovereign. The king read a diſcourſe, in which he declared null and void the reſolutions of the 17th, but at the ſame time preſented the plan of a conſtitution for France. It contained many good and patriotic principles, but preſerved the diſtinction of orders, and the exerciſe of *lettres de cachet*; it ſaid nothing about any active ſhare in the legiſlative power to be poſſeſſed by the ſtates-general, and was ſilent both about the reſponſibility of miniſters and the liberty of the preſs. The king concluded by commanding the deputies immediately to retire, and to aſſemble again on the following day. He then withdrew, and was followed by all the nobles and a part of the clergy. The commons remained in gloomy ſilence on their ſeats. It was interrupted by the grand maſter of the ceremonies, who reminded the preſident of the intentions of the king. Inſtantly the vehement count de Mirabeau, ſtarting from his ſeat, exclaimed with indignation, "The commons of France have determined to debate. We have heard the intentions that have been ſuggeſted to the king; and you, who cannot be his agent with the ſtates-general, you who have here neither ſeat nor voice, nor a right to ſpeak, are not the perſon to remind us of his ſpeech. Go tell your maſter, that we are here by the power of the people, and that nothing ſhall expel us but the bayonet." The applauſe of the aſſembly ſeconded the enthuſiaſm of the orator, and the maſter of the ceremonies withdrew in ſilence.

28 Ill received by the commons.

29 Debates after the king's departure.

M. Camus then roſe; and in a violent ſpeech indignantly ſtigmatiſed the royal ſeſſion by the obnoxious appellation of a *bed of juſtice*; he concluded by moving that the aſſembly ſhould declare their unqualified adherence to their former decrees. This motion was followed by another, pronouncing the perſons of the deputies inviolable. Both were ſupported by Meſſrs Petion, Barnave, Glaizen, the Abbés Gregoire, Sieyes, and many others, and were unanimouſly decreed. The aſſembly therefore continued their ſittings in the uſual form. On the following day the majority of the clergy attended as members; and on the 25th the duke of Orleans, along with 49 of the deputies belonging to the order of nobles, joined them alſo. The remaining nobles, as well as the ſmall minority of the clergy, now found themſelves aukwardly ſituated. Whether on this account, or becauſe their leaders had by this time formed a plan for carrying their point not by peaceable means but by the aid of a military force, the king, on the 27th, invited by a preſſing letter both orders to join the commons. This requeſt was immediately complied with, although many of the nobility diſapproved of the meaſure.

30 Alarming ſituation of France at this period.

The ſituation of France was now become truly alarming. When the king retired from the aſſembly after the royal ſeſſion, he was followed by more than 6000 citizens,

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citizens, from whom loud clamours and every mark of disapprobation broke forth. All Verſailles was ſpeedily in an uproar. M. Neckar had repeatedly ſolicited his diſmiſſion, and the report of this had increaſed the popular clamour. The court was in conſternation. The king probably diſcovered, with no great ſatisfaction, that his miniſter was more popular than himſelf. At ſix o'clock in the evening the queen ſent for M. Neckar. When he returned from the palace, he aſſured the crowd that waited for him that he would not abandon them; upon which they retired ſatisfied. At the ſame time the news of the royal ſeſſion had thrown the city of Paris into violent agitation. The peace of that capital was at this time endangered by a variety of cauſes. A dreadful famine raged through the land, which in a great city is uſually moſt ſeverely felt. This prepared the minds of men for receiving unfavourable impreſſions of their political ſtate. Every effort was moreover made to diſorganize the government, and produce a diſlike to the ancient order of things. The

31 Numerous ſeditious publications.

preſs poured forth innumerable publications, filled with new and ſeducing, though generally impracticable, theories of liberty. Theſe were diſtributed *gratis* among the bulk of the people of Paris, and diſperſed in the ſame manner through the provinces. Philip duke of Orleans (preſumptive heir to the crown failing the children and brothers of the king) is with good reaſon believed to have ſupplied this expence out of his more than royal revenues. In the gardens of the Palais Royale at Paris, which belonged to him, an immenſe multitude was daily aſſembled, liſtening from morning till night to orators who deſcanted upon the moſt violent ſubjects of popular politics. Many of theſe orators were ſuſpected to be in his pay. It was even believed that his money found its way into the pockets of ſome of the moſt diſtinguiſhed leaders in the national aſſembly.

32 Seduction of the military.

But the government was, if poſſible, ſtill more dangerouſly aſſaulted by the methods now generally uſed to ſeduce the military. Every officer of the French army belonged to the order of the nobles; and from that quarter, therefore, it might have been imagined that there was little danger. But this very circumſtance became the means of diſorganizing that great engine of deſpotiſm. As the ſoldiers could not avoid imbibing ſome of the new opinions, their own officers became the firſt objects of their jealouſy; eſpecially in conſequence of that impolitic edict of Louis XVI. which required every officer to produce proofs of four degrees of nobility; and thus inſulted, by avowedly excluding the private men from promotion. Perhaps with a view to what might happen, the inſtructions to the deputies of the *tiers etat* had recommended an increaſe of the pay of the ſoldiers. And now at Paris every art was uſed to gain them to the popular cauſe. They were conducted to the Palais Royal, and were there careſſed and flattered by the populace, while they liſtened to the popular harangues. Theſe arts were ſucceſsful. On the 23d of June they firſt refuſed to fire on the mob in a riot. Some of them were on the 30th reported to be in confinement for this offence; a crowd inſtantly collected, and reſcued them, the dragoons that were brought to ſuppreſs the tumult grounding their arms: a deputation of the citizens ſolicited of the aſſembly the pardon of the priſoners. The aſſembly applied to the king, who pardoned them accordingly.

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All theſe events, together with the tumultuous ſtate of the capital, which was daily increaſing, made it neceſſary for the king to call out the military force to reſtore, if poſſible, the public peace. That his intentions were pure, the then ſtate of affairs will permit of but very little doubt; but the ariſtocracy, with the Count d'Artois at their head, were bringing forward other meaſures, which ultimately contributed to the ruin of themſelves, the king, and the kingdom. Crowds of ſoldiers were collected from all parts of the kingdom around Paris and Verſailles. It was obſerved, that theſe conſiſted chiefly of foreign mercenaries. Camps were traced out. Marſhal Broglio, a tried veteran, was ſent for and placed at the head of the army. The king was ſuppoſed to have entirely yielded to new counſels, and every thing bore the appearance of a deſperate effort to reſtore the energy of the ancient government. This is the moſt important period of the French revolution; yet the ſpecific deſigns of the leading actors have never been clearly underſtood. It was rumoured at the time, that Paris was to be ſubdued by a ſiege and bombardment; that the aſſembly was to be diſſolved, and its leaders put to death. Theſe are incredible exaggerations; but the criſis of French liberty was univerſally regarded as at hand, and alſo the exiſtence of the national aſſembly as an independent body; or at leaſt upon any other footing than that propoſed by the king on the 23d of June.

33 The military called out.

33 The aſſembly addreſs the king to remove them, which is refuſed.

An able and eloquent addreſs to the king againſt the aſſemblage of foreign troops in their neighbourhood was brought forward by Mirabeau, and voted by the aſſembly. The king quickly replied, that the ſtate of the capital was the cauſe of aſſembling the troops, and offered to transfer the ſtates-general to Noyons or Soiſſons. "We will neither remove (exclaimed Mirabeau) to Noyons nor to Soiſſons; we will not place ourſelves between two hoſtile armies, that which is beſieging Paris and that which may fall upon us from Flanders or Alſace; we have not aſked permiſſion to run away from the troops; we have deſired that the troops ſhould be removed from the capital."

Thirty-five thouſand men were now ſtationed in the neighbourhood of Paris and Verſailles. The poſts were occupied which commanded the city, and camps were marked out for a greater force. The Count d'Artois and his party regarded their plans as ripe for execution; and M. Neckar received a letter from the king, requiring him to quit the kingdom in 24 hours. That popular (A) miniſter took the route of Bruſſels on the following day, when his departure was made public. In his diſmiſſion the popular, or as it was now called the *democratic*, party thought they ſaw the reſolution adopted to accompliſh their ruin. The aſſembly again addreſſed the throne; they requeſted anew the removal of

34 They again addreſs the king;

(A) Popular he certainly was; but he either had not fortitude and talents to execute his own plans, or acted a baſe part to his amiable maſter. From baſeneſs we acquit him.

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of the troops, offering to be responsible for the public peace, and to proceed in a body to Paris to encounter personally every danger that might occur. But they were coolly told, that the king was the best judge of the mode of employing the troops, and that the presence of the assembly was necessary at Versailles. From a sovereign who doubtless recollected the proceedings of the long parliament of England, a different reply could not in reason be expected. On receiving it, however, it was instantly decreed, on the motion of the marquis de la Fayette, that the late ministry had *carried with them* the confidence of the assembly; that the troops *ought* to be *removed*; that the ministry are and shall be responsible to the people for their conduct; that the assembly persisted in all its former decrees; and that as it had taken the public debt under the protection of the nation, no power in France was entitled to pronounce the infamous word *bankruptcy*.

35 And are again resisted.

35 Decree of the assembly in consequence.

36 Consternation at Paris on Neckar's retreat.

The city of Paris was thrown into deep consternation by the news of M. Neckar's retreat. His bust and that of the Duke d'Orleans were dressed in mourning, and carried through the streets. The royal Allemand, a German regiment, broke in pieces the busts, and dispersed the populace. The prince De Lambesq, grand ecuyer of France, was ordered to advance with his regiment of cavalry, and take post at the Thuilleries. Being a man of a violent temper, and enraged by the appearances of disapprobation which were visible around him, he furiously cut down with his sword a poor old man who was walking peaceably in the gardens. The consequences of this act of inhumanity were such as might have been expected; a shout of execration instantly arose; the cry *to arms* was heard; the military were assaulted on all sides; the French guards joined their countrymen, and compelled the Germans, overpowered by numbers, and unsupported by the rest of the army, to retire.

37 Cruelty of the Prince De Lambesq.

38 Terror in the city universal.

All order was now at an end, and as night approached an universal terror diffused itself through the city. Bands of robbers were collecting; and from them or from the foreign soldiery a general pillage was expected. The night passed away in consternation and tumult. It was found in the morning that the hospital of St Lazare was already plundered. The alarm bells were rung; the citizens assembled at the Hotel de Ville, and adopted a proposal that was there made, of enrolling themselves as a militia for general defence, under the appellation of the *national guard*. This day and the succeeding night were spent in tolerable quietness, without any attempt on the part of the army. On the morning of the memorable 14th of July, it was discovered that the troops encamped in the Champs Elisées had moved off, and an immediate assault was expected. The national guard now amounted to 150,000 men; but they were in general destitute of arms. They had assumed a green cockade; but on recollecting that this was the livery of the Count d'Artois, they adopted one of red, blue, and white. M. de la Salle was named commander in chief, officers were chosen, and detachments sent around in quest of arms. In the Hotel des Invalides upwards of 30,000 stand of arms were found, along with 20 pieces of cannon; a variety of weapons was also procured from the *garde meuble de la couronne*, and from the shops of armourers, cutlers, &c.

The celebrated fortress of the Bastile was an object of much jealousy to the Parisians. At 11 oclock in the morning, M. de la Rosiere, at the head of a numerous deputation, waited upon M. de Launay the governor, who promised, along with the officers of his garrison, that they would not fire upon the city unless they should be attacked. But a report was soon spread through Paris, that M. de Launay had, in a short time thereafter, admitted into the fortress a multitude of persons, and then treacherously massacred them. The cause of this piece of perfidy has never been explained. The fact itself has been denied; but it was attested at the time by the duke of Dorset, the British ambassador at the court of France. The effect of the report was, that a sudden resolution was adopted of assaulting the Bastile; an immense and furious multitude rushed into its outer, and soon forced their way into its inner, courts, where they received and returned a severe fire for the space of an hour. The French guards, who were now embodied into the national guard, conducted the attack with skill and coolness: they dragged three waggons loaded with straw to the foot of the walls, and there set them on fire; the smoke of these broke the aim of the garrison, while it gave no disturbance to the more distant assailants. The besieging multitude pressed the attack with incredible obstinacy and vigour for the space of four hours; the garrison was in confusion; the officers served the cannon in person, and fired their muskets in the ranks; the governor in despair, thrice attempted to blow up the fortress. A capitulation, when at last sought, was refused to the garrison, and an unconditional surrender took place. The governor, and M. de Losme Salbrai his major, a gentleman of distinguished humanity and honour, became victims of popular fury in spite of every effort that could be made for their protection; but the French guards succeeded in procuring the safety of the garrison. Only seven prisoners were found in the Bastile. A guard was placed in it, and the keys were sent to the celebrated M. Brissot de Warville, who a few years before had inhabited one of its caverns.

39 The Bastile attacked;

40 And surrendered unconditionally.

The remaining part of this eventful day was spent at Paris in a mixture of triumph and alarm. In the pocket of the Governor of the Bastile a letter was found, encouraging him to resistance by the promise of speedy succours, written by M. de Flesselles, the prevot de marchands, or chief city magistrate, who had pretended to be a most zealous patriot. This piece of treachery was punished by instant death; and his bloody head was carried through the city on a pole, along with that of M. de Launay. At the approach of night a body of troops advanced towards the city, at the Barriere d'Enfer. The new national guard hurried thither, preceded by a train of artillery, and the troops withdrew upon the first fire: barricadoes were every where formed, the alarm-bells were rung, and a general illumination continued during the whole of this night of confusion.

41 A new ministry appointed.

In the mean time, it was obvious that the new ministry were entering upon a difficult scene of action, where one false step might lead to ruin, and where their own plan of conduct ought to be maturely digested. Marshal Broglio was made minister of war, the baron de Breteuil president of finance, M. de la Galeziere comptroller-general, M. de la Porte intendant of the war department, and M. Foulon intendant of the navy;

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navy; but these were only meant to act as official men, under the Count d'Artois, and the other leaders of the aristocracy. To these leaders there did not even remain a choice of difficulties; no resource was left but that of overawing by military power the national assembly and the capital, and of risking the desperate measure of a national bankruptcy, which the court had not formerly dared to encounter, and to avoid which it had convoked the states-general. No trace remains, however, of any attempt to put this criminal, but last resource, in execution. The evening after the departure of M. Neckar was spent by the court of Versailles in feasting and joy, as if a victory had been gained. The courtiers of both sexes went round among the soldiery, striving to secure their fidelity by caresses, largesses, and every species of flattering attention. The ministry not only failed to support the Prince de Lambesq in the post which he had been sent to occupy, but they suffered the whole of the 13th to pass in indecision, while the capital was in a state of rebellion, while an army was formally mustering within its walls, and the names of the principal nobility were put up in lists of proscriptions. They received the news of the capture of the Bastile with confusion and dismay, which were increased, if possible, by information given by Marshal Broglio, that the troops refused to act against Paris or the national assembly. In this perplexity they adopted the miserable device of concealing from the king the state of public affairs; and that unfortunate prince was thus perhaps the only person out of millions around him who remained ignorant of the convulsions in which his country was involved.

42 Their situation difficult, and their conduct bad.

At length, at midnight, the Duke de Liancourt forced his way into the king's apartment, and told him of the revolt of his capital, of his army, and of the surrender of the fortress of the Bastile. The Count d'Artois, who was present, still attempted to retain the monarch under his fatal delusion; but the Duke de Liancourt turning round, exclaimed, "As for you, Sir, your life can only be saved by instant flight; I have seen with horror your name in the bloody list of the proscribed." Accordingly the Count, with the members of his short lived administration and their adherents, fled to the frontiers. And thus an emigration commenced, the source of that terrible contest which has covered Europe with bloodshed and mourning. This ministry had, no doubt, many difficulties to contend against; but an accurate attention to their conduct excites a suspicion which, while it exculpates them from many intended crimes that have been laid to their charge, at the same time does little honour to their talents. It is this, that they had come into office without having formed any clear plan of conduct; that they were men acting without decision and at random, and consequently became the sport of those events which they wanted skill and vigour to direct or controul. By their introduction into office, and their misconduct while in it, the royal authority fell prostrate before the popular party in the national assembly. The nobles and the clergy still remained, but confounded in one assembly with the more numerous order of the *tiers etat*; and no longer rallying round a throne that was too feeble to afford protection, they soon yielded to that fierce and levelling spirit of democracy that now rose around them.

But the person of the monarch was still beloved.— Early next morning the king went to the assembly, but with none of the usual solemnities. He "regretted the commotions of the capital, disavowed any knowledge of an intention against the persons of the deputies, and intimated that he had commanded the removal of the troops." A deep and expressive silence prevailed for a few moments; this was succeeded by vehement and universal shouts of applause. The king arose to depart, and instantly the whole assembly crouded around, and attended him to his palace. The queen appeared at a balcony with the dauphin in her arms; the music played the pathetic air of *Où peut-on être mieux qu' au sein de sa famille*. The enthusiasm of loyalty communicated itself to the surrounding multitudes, and nothing was heard but acclamations of joy.

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43 The king goes to the assembly.

On the following day, the king declared his resolution to visit the city of Paris in person. Accordingly that prince, who never wanted personal courage, however deficient he might be in political stedfastness, set out, attended by some members of the assembly and by the militia of Versailles. He was met by the celebrated M. de la Fayette, at the head of a body of the national guard, of which he had now been chosen commander in chief. M. Bailly, in whose person the ancient office of mayor of Paris had been revived, received the king at the gates, and delivered to him the keys. All this while no shout was heard from the crowd of innumerable spectators but that of *Vive la nation*. The king advanced to the Hotel de Ville, where the new cockade was presented to him, which he put on, and presented himself with it at a window. At the sight of this badge of patriotism an universal shout of *Vive le Roi* burst forth from every quarter; and he returned to Versailles amidst general triumph and applause.

44 And next day visits the city of Paris in person.

Much confusion still prevailed in the capital; but there was more appearance of regularity than could have been expected at the conclusion of such important events. This arose from a casual concurrence of circumstances. To conduct with ease the elections to the states-general, Paris had been divided into 60 districts, each of which had a separate place of meeting. The people did not elect the members to the states-general; but they chose delegates, who, under the name of electors, voted for the members. At the commencement of the disturbances, the electors, at the request of their fellow-citizens, assumed a temporary authority; of which, however, they were soon weary, and as soon as possible procured the public election of 120 persons as municipal officers for the government of the city. The citizens having got the habit of assembling in their districts, grew fond of it: they assembled frequently, made rules for their own government, and sent commissioners to communicate with other districts. The tumultuous nature of these meetings, and the vehemence of debate which prevailed in them, will best be conceived from the ludicrous contrivance of one of their presidents, who stationed a drummer at the back of his chair, and when the confusion and noise became altogether ungovernable, gave the signal for beating the drum, which speedily overpowered every other noise. These meetings, however, gradually ripened into clubs, in which much dexterity and intrigue were exerted.

45 In which much confusion still prevailed.

The whole of the late ministry escaped excepting M. Foulon.

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Foulon. His character, it may well be imagined, was extremely unpopular; for he is said to have asserted, that he would "make the people of Paris eat hay." He had retired to the country, but was seized by his own vassals, and brought to Paris with a bundle of hay tied to his back. In spite of every effort made by M. M. Bailly and Fayette to procure him a fair trial at least, he was carried to the Place de Grève, and hanged at a lamp-iron by the enraged multitude. His son-in-law M. Berthier, attempting to defend himself against a similar fate, fell, covered with wounds. Their heads were carried round on poles; and thus the populace became habituated to the sight of blood and murder: they were even taught by popular songs to glory in such actions, and particularly by the well known song *Ca ira*.

46 Fate of M. Foulon, one of the late ministry, and his son-in-law Bertier.

47 M. Necker returns and the immediate consequences of it.

In consequence of an invitation from the king, M. Necker returned to France. He was received by the assembly with great applause, and in Paris with infinite solemnity and triumph. He here, however, committed a political error that made some noise. In deploring the late excesses and murders, and taking notice of the arrest of M. Bezenval, an officer of the Swiss guards he requested of the electors at the Hotel de Ville, in a solemn harangue, that the past should be forgotten; that proscriptions should cease, and a general amnesty be proclaimed. In a moment of enthusiasm this was agreed to, and the electors decreed what unquestionably exceeded their powers. The districts of Paris were instantly in commotion; the electors alarmed, declared that they only meant that "henceforth the people would punish no man but according to law;" and, at the same time, to prove that they themselves were free from ambition, they formally renounced all their own powers. The assembly took up the question. Messf. Lally, Tolendal, Mounier, Clermont, Tonnerre, Garat junior, and others, declared that no person ought to be arrested without a formal accusation. While Messf. Mirabeau, Robespierre, Barnave, and Gleizen, alleged, on the contrary, that the people were entitled to lay hold of any man who had publicly appeared at the head of their enemies. The debate ended, by admitting the explanation of the electors, and by a declaration that it was the duty of the assembly to see justice executed in all cases.

48 The commotions, &c. of the capital reach to the provinces.

The commotions and enthusiasm of the capital were speedily communicated to the provinces. In every quarter the people seized upon all the arms that could be found, and the military uniformly refused to act against them. Many acts of outrage were committed in Brittany, at Strasbourg, in the Lionnois, and elsewhere, in which the nobility were the sufferers. The mischiefs that occurred were usually magnified at a distance; but that very circumstance was an additional evil. For example: It was stated in the National Assembly that M. de Mesmay, lord of Quincy, invited a number of patriots, among whom were the officers of a neighbouring garrison, to a splendid entertainment at his house, to celebrate the happy union of the three orders: That in the midst of the feast the master of the house contrived to withdraw unnoticed, and to set fire to a train previously laid, which communicated with a quantity of gunpowder in the cellars, in consequence of which the whole company, by a sudden explosion, were blown into the air. It was found on inquiry, that there was not one word of truth in the whole story. But before this inquiry could be made, all France had resounded with accounts of the pretended bloody tragedy: and the whole nobility of the kingdom interested in a less or greater degree, from the prejudices excited by this unhappy report, the origin of which has never been well explained. It would be vain to state all the idle rumours to which at this time the blind credulity of the multitude gave currency. At one time, the Aristocrats were cutting down the green corn, at another time they were burying flour in common sewers, or casting loaves into the Seine. One report was no sooner proved to be false than another arose, and the whole nation was agitated by suspicion and alarm. The National Assembly were engaged in framing their celebrated declaration of the rights of man, which was to form the basis of the new constitution, when the alarming accounts, received from all quarters, of the state of anarchy into which the kingdom was falling, obliged them suddenly to turn their attention to objects of practical necessity. The privileged orders found themselves become the objects of universal jealousy and hatred; and that something must instantly be done to save their families and property, which were menanced on every side with persecution and pillage. Regarding the popular torrent as now become irresistible, to save something they resolved to sacrifice a part.

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49 Viscount de Noailles and Duke d'Aiguillon propose that

On the afternoon sitting of the 4th of August, the Viscount de Noailles, seconded by the Duke d'Aiguillon, opened one of the most important scenes in the French Revolution, or in the history of any country. These noblemen stated, that the true cause of the commotions which convulsed the kingdom existed in the misery of the people, who groaned under the double oppression of public contributions and of feudal services. "For three months (said M. de Noailles) the people have beheld us engaged in verbal disputes, while their own attention and their wishes are directed only to things. What is the consequence? They are armed to reclaim their rights, and they see no prospect of obtaining them but by force." He therefore proposed to do justice as the shortest way of restoring tranquillity, and for that purpose to decree, that henceforth every tax should be imposed in proportion to the wealth of the contributors, and that no order of the state should be exempted from the payment of public burdens; that feudal claims should be redeemed at a fair valuation; but that such claims as consisted of personal services on the part of the vassal should be abolished without compensation, as contrary to the imprescriptible rights of man. The extentive possessions of the noblemen who made these proposals added much lustre to the disinterested sacrifice which they offered. Their speeches were received with the most enthusiastic applauses by the Assembly and the galleries, and their proposals were decreed by acclamation without a vote. No nation is so much led by the influence of sudden emotions as the French. The patriotic contagion now spread fast through every breast, and a contest of generosity ensued. The hereditary jurisdictions possessed by the nobles within their own territories were next sacrificed. All places and pensions granted by the Court were suppressed, unless granted as the reward of merit or of actual services. The game laws, which condemned the husbandman, under severe penalties, to leave his property

50 The taxes should be in proportion to the wealth of the contributors.

51 The game laws &c. abolished.

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ty a prey to infinite multitudes of animals reserved for pastime, had always been numbered among the severe grievances of the French peasantry. These were therefore renounced, along with the exclusive rights of rabbit warrens, fisheries, and dovecotes. The sale of offices was abolished, and the fees exacted from the poor, together with the privilege of holding a plurality of livings, were relinquished by the clergy. The deputies of the *Pais d'Etat*, or privileged provinces, with the deputies of Dauphiné at their head, next came forward, and offered a surrender of their ancient privileges, requesting that the kingdom might no longer remain parcelled out among Dauphinois, Bretons, Provençaux, &c. but that they should all form one great mass of French citizens. They were followed by the representatives of Paris, Marseilles, Lyons, Bourdeaux, Strasbourg, &c. who requested leave to renounce all their separate privileges as incorporations, for the sake of placing every man and every village in the nation upon a footing of equality. Thus the Assembly proceeded, till every member had exhausted his imagination upon the subject of reform. To close the whole, the Duc de Liancourt proposed that a solemn *Te Deum* should be performed, that a medal should be struck in commemoration of the events of that night; and that the title of RESTORER OF GALLIC LIBERTY should be bestowed upon the reigning monarch. A deputation was accordingly appointed to wait upon the king, respectfully to inform him of these decrees.

52 Many ancient privileges are voluntarily surrendered.

53 Tithes and revenues of the clergy taken away.

Several succeeding days were necessary to form into laws the decrees of the 4th August, and committees were appointed to make out reports for that purpose. One of these reports having included the tithes and revenues of the clergy among the abuses that were to be done away, and having proposed in lieu of them to grant a certain stipend to the different ministers of religion to be payable by the nation, the clergy attempted to make a stand in defence of their property, and violent debates ensued. In these they were ably supported by the Abbé Sieyes: but as the clergy had formerly deserted the nobles, so they were now in their turn abandoned to their fate by the hereditary aristocracy. The popular party had long regarded the wealth of the church as an easy resource for supplying the wants of the state.—Never was there a more complete proof of the influence of opinion over the affairs of men. The Catholic clergy of France, though possessed of more property than they enjoyed at the time when princes took up arms or laid them down at their command, now found so few defenders, that they were terrified into a voluntary surrender of all that they and their predecessors had possessed for ages. In their overthrow, they scarcely enjoyed even the barren honour of having fallen the last of those privileged orders that so long had ruled over this ancient kingdom. They and the nobles, and the king, still possessed their former titles and nominal dignity; but all of them were now subdued, and at the mercy of the commons of France, who speedily dismissed them at their pleasure.

As a short season of tranquillity in the Court and the National Assembly succeeded these great popular sacrifices, the king laid hold of it as a fit opportunity for the appointment of a new ministry. They consisted of the Archbishop of Vienne, the Archbishop of Bourdeaux, M. Neckar, the Count de St Priest, Count de Montmorin, the Count de la Luzerne, and the Count de la Tour du Pin Paulin. M. Neckar, as minister of finance, having stated the distressed situation of the revenue, presented the plan of a loan of thirty millions of livres. But M. Mirabeau, from a spirit of rivalship, as it would seem, to M. Neckar, prevailed with the Assembly to alter and to narrow the conditions of it in such a degree that very few subscribers were found, and the loan could not be filled up. This failure involved the Assembly in a considerable degree of unpopularity; in consequence of which they allowed M. Neckar to prescribe his own terms for the purpose of obtaining a loan of eighty millions. But the happy instant of public confidence had been allowed to pass away, and this loan was never more than half filled up. Recourse was next had to patriotic contributions; and great numbers of gold rings, silver buckles, and pieces of plate, were presented to the Assembly. The Royal family themselves sent their plate to the mint, either to give countenance to these donations, or, as M. Neckar has since asserted, through absolute necessity, for the purpose of supporting themselves and their family. The confusion into which the nation had been thrown by the late events had produced a suspension of the payment of all taxes. There existed, in fact, no efficient government; and if society escaped entire dissolution, it was merely in consequence of those habits of order which are produced by a state of long continued civilization. The business of government could not be transacted without money, and many vain efforts were made by the ministry to procure it. At length M. Neckar was driven to the desperate resource of proposing a *compulsory loan*, or that every individual possessed of property should advance to the state a sum equal to one-fourth of his annual income. This bold proposition was supported by Mirabeau, and adopted by the Assembly; but it does not appear to have ever been effectually executed.

54 A new ministry appointed,

55 Who find great difficulty in raising money.

In the mean time, the Assembly was busily occupied in framing the celebrated declaration of the *Rights of Man*, which was afterwards prefixed to the new constitution. This was followed by the discussion of a point of much delicacy and difficulty; viz. What share of legislative authority the king ought to possess under the new constitution; whether an absolute negative or *veto*, a suspensive *veto*, or no *veto* at all? This question operated like a touchstone for trying the sentiments of every person; and the assembly, consisting of 1200 men, was now seen to arrange itself into two violent contending factions. The debates were vehement and tumultuous, and continued for many days. As the assembly sat in public, and as multitudes of people of all descriptions were admitted into the galleries, and even into the body of the hall among the members, many indecent scenes took place in consequence of the interference of the spectators to applaud or censure the sentiments which were delivered. Thus the public at large became speedily interested in the discussion; the city of Paris took a side in opposition to the *veto*, and the whole empire was thrown into agitation by new and speculative questions. The distinguished place which France holds among the nations of Europe rendered these singular events and discussions the object of universal attention. The contagious love of novelty spread rapidly abroad, and gave rise to that watchful jealousy on the part of the monarchs of Europe, which

56 Discussion on the Rights of Man,

57 And the king's veto.

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was ſpeedily to burſt forth in a bloody tempeſt.—In the preſent caſe, the people of Paris became moſt eagerly intereſted. Rumours of plots were ſpread through the country, and a new ſtorm was obviouſly gathering, when the queſtion was thus got quit of. M. Mounier remarked, that the executive power could poſſeſs no negative againſt the decrees of the preſent aſſembly, which had been nominated by the nation with ſupreme powers for the expreſs purpoſe of framing a conſtitution, which was to remain binding over all orders of men in the ſtate; and with regard to future legiſlatures, the king declared by a meſſage, that he wiſhed to poſſeſs no more than a *ſuſpenſive veto*. It is remarkable that the popular Miniſter concluded a ſpeech in favour of the abſolute veto of the crown with theſe words, "That it would be better to live in Conſtantinople than in France, if laws could be made without the royal ſanction." This political adventurer is, however, accuſed of having taken care to circulate in Paris a report that he had oppoſed the *veto* with all his influence; and to give credit to the ſtory, he is ſaid to have quitted the aſſembly juſt before the diviſion, that his vote might not appear on record againſt it.

In the debates about the *veto* the month of Auguſt was ſpent; and in the beginning of September a new conſtitutional queſtion was preſented to the aſſembly by one of its numerous committees. This was, whether the legiſlative body ought to conſiſt of one or of two chambers? Mounier, Lally, Tollendal, Clermont Tonnerre and others, who were zealous lovers of freedom upon what were then accounted moderate principles, ſupported eagerly the idea of eſtabliſhing two independent chambers in imitation of the Britiſh conſtitution; but they were deſerted both by the democratic and ariſtocratic parties. The firſt of theſe regarded an upper houſe or ſenate as a refuge for the old ariſtocracy, or as the cradle of a new one; while the higher nobles and clergy feared leſt ſuch an arrangement might prevent the future re-eſtabliſhment of the ancient diviſion into three orders. Of 1000 members who voted, only 89 ſupported the propoſal for dividing the legiſlature into two chambers.

58 Diſcuſſion about the legiſlative body, whether it ought to conſiſt of one or two chambers.

Soon after this, the king gave his ſanction to the important decrees of the 4th of Auguſt, but not without ſome heſitation, and expreſſing doubts of the wiſdom of ſome of them in a letter to the aſſembly. At the ſame time the inviolability of the perſon of the monarch was decreed, the indiviſibility of the throne, and its hereditary deſcent from male to male in the reigning family.—Here we ſhall not here attempt to enter into a detail of the various articles of the new conſtitution as connected with the circumſtances under which they became the ſubject of diſcuſſion. We ſhall only ſtate thoſe more remarkable circumſtances which tend to aſcertain the peculiar changes which the ſentiments of the nation underwent in the progreſs of a revolution the moſt remarkable that occurs in human hiſtory.

59 The royal ſanction granted to the decrees of the 4th Auguſt, &c.

In conſequence of the debates upon the queſtions of the *veto* and the two chambers, the minds of parties had become much irritated. Paris wore the ſame threatening aſpect that it had done in the months of June and of July preceding; and every thing ſeemed tending towards an important criſis. The ariſtocratic party accuſed their antagoniſts of a deſign to excite new inſurrections; and the charge was retorted, by circulating a report that a plot for conveying the king to Metz was already ripe for execution.

60 State of parties in Paris.

From the period of the defection of the French guards, who were now in the pay of the capital, the protection of the royal family had been entruſted to the militia or national guards of Verſailles, together with the regiment of the *gardes du corps*, which was compoſed entirely of gentlemen. Upon the circulation of the report of the intended flight of the king, the French guards began to wiſh to be reſtored to their ancient employment of attending his perſon, for the purpoſe of preventing any attempt of this nature. This idea was eagerly cheriſhed by the capital; and, in ſpite of every effort uſed by M. de la Fayette, the obvious appearance of approaching diſturbances could not be prevented. The popular party ſaw the advantages which they would derive from placing the aſſembly and the king in the midſt of that turbulent metropolis which had given birth to the revolution, and upon the attachment of which they could moſt ſecurely depend. Every encouragement was therefore given by the moſt active leaders of what was now called the *Democratic* party to the project of eſtabliſhing the court at Paris. The miniſtry were under no ſmall degree of alarm; and the count d'Eſtaing, who commanded the national guard of Verſailles, requeſted the aid of an additional regiment. The regiment of Flanders was accordingly ſent for: its arrival cauſed no ſmall degree of anxiety; and every effort was inſtantly made to gain over both officers and ſoldiers to the popular cauſe.

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61 Conſequences of their mutual jealouſies.

On the firſt of October the garde du corps, probably for the purpoſe of ingratiating themſelves with the newly arrived regiment, and perhaps to attach them more ſteadily to the royal cauſe, invited the officers of the regiment of Flanders to a public entertainment. Several officers of the national guard, and others of the military, were invited. The entertainment was given in the opera houſe adjoining to the palace; ſeveral loyal toaſts were drank: but it is aſſerted, that when the favourite popular toaſt *The Nation* was given, it was rejected by the gardes du corps. In ordinary caſes, ſuch a trifling circumſtance as this, or even any other of the tranſactions of a night of feſtivity, would juſtly be regarded as unworthy of notice in recording the more remarkable events in the hiſtory of a great nation; but ſuch was now the ſingular ſtate of affairs, that the moſt trivial occurrences were inſtrumental, by their combination, in the production of important conſequences. The queen, having ſeen from a window of the palace the gaiety which prevailed among the military, prevailed with the king, who was juſt returned from hunting, to viſit them along with herſelf and the dauphin. Their ſudden appearance in the ſaloon kindled in an inſtant the ancient enthuſiaſm of French loyalty. The grenadiers of the regiment of Flanders, along with the Swiſs chaſſeurs, had been admitted to the deſert; and they, as well as their officers, drank the health of the King, Queen, and Dauphin, with their ſwords drawn. The royal family having bowed with politeneſs to the company, retired.—Of all nations, the French are moſt liable to the influence of ſudden impreſſions: the muſic played the favourite air, *O Ricard! O mon Roi! l'univers t'abandonne*, "O Richard! O my king! the world abandons thee." In the eagerneſs of loyalty,

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loyalty, the national cockade, which had been adopted by ſome of the gardes du corps, was thrown aſide, and white cockades were ſupplied as quickly as they could be made by the ladies of the court.

When theſe events were next day reported at Paris, accompanied by a multitude of exaggerations, they gave riſe to the moſt violent alarm. The capital was at that time ſuffering all the horrors of famine; and in ſuch a ſituation, the news of a feaſt which others have enjoyed, ſeldom gives much pleaſure to hungry men. To the former report of an intended flight on the part of the royal family, it was now added, that a counter revolution was ſpeedily to be attempted by force of arms; and that the preſent ſcarcity was artificially created by the court for the purpoſe of reducing the people to ſubmiſſion. Their ariſtocratic antagoniſts have ſince aſſerted, that the famine was indeed artificial; but that it was created by a portion of the violent party in the national aſſembly, which was then denominated the *Cabal*, whoſe object was to excite commotions as the means of procuring an opportunity of ſetting the duke of Orleans at the head of the ſtate, either as regent, or in ſome other form. To this laſt party Mirabeau is ſaid to have belonged.

For four days no notice was taken in the aſſembly of what had paſſed at the entertainment given by the gardes du corps. On the 5th of October M. Petion mentioned it for the firſt time, and a violent debate enſued; during which Mirabeau roſe and exclaimed, "Declare that the king's perſon *alone* is ſacred, and I myſelf will bring forward an impeachment;" thereby alluding to the conduct of the queen. While this debate was proceeding at Verſailles, the city of Paris was in commotion. A vaſt multitude of women of the loweſt rank, with ſome men in women's clothes, had aſſembled at the *Hotel de Ville*, and were calling aloud for arms and bread. They reſolved to proceed inſtantly to Verſailles to demand bread from the king and from the national aſſembly. La Fayette oppoſed them in vain; for his own ſoldiers refuſed to turn their bayonets againſt the women. Upon this one Staniſlaus Maillard, who had diſtinguiſhed himſelf at the taking of the Baſtile, offered himſelf as a leader to the inſurgents. He had the addreſs to prevail with them to lay aſide ſuch arms as they had procured; and he ſet out for Verſailles about noon with as much order among his followers as could well be expected from ſuch an aſſemblage. Either becauſe the paſſion for going to Verſailles had ſuddenly become too infectious to be reſiſted, or becauſe the multitude already gone thither was now accounted dangerous, the mayor and municipality of Paris thought fit to give orders to La Fayette inſtantly to ſet out for that place at the head of the national guard.

62 A multitude of women of the loweſt rank march to Verſailles,

In the mean time, Maillard approached Verſailles with his tumultuous troop; he arranged them in three diviſions, and perſuaded them to behave with tolerable decency. The king was hunting in the woods of Mendon when he was informed of the arrival of a moſt formidable band of women calling aloud for bread. "Alas! (replied he) if I had it, I ſhould not wait to be aſked." Maillard entered the aſſembly accompanied by a deputation of his followers to ſtate the object of their journey. The aſſembly, to pacify them, ſent a deputation of their own number along with them to lay their complaints before the king. His majeſty received the whole with great politeneſs, and readily agreed to go into any meaſures for the ſupply of the capital that could be ſuggeſted. The report of this behaviour had ſuch an effect upon the multitude collected around the palace, that they began to diſperſe; but they were ſpeedily ſucceeded by another crowd not leſs numerous. A ſudden reſolution of flight ſeems now to have been propoſed by the court; for the king's carriages were brought to the gate of the palace which communicates with the Orangery: but the national guard of Verſailles refuſed to allow them to paſs, and the king himſelf refuſed to remove, or to allow any blood to be ſhed in his cauſe.

63 And ſend a deputation to the aſſembly.

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64 La Fayette with his army reaches Verſailles at night.

La Fayette with his army at length arrived about 10 o'clock at night, and found the aſſembly in a very unpleaſant ſituation. Their hall and galleries were crowded by the Pariſian fiſh-women and others of the mob, who, at every inſtant, interrupted the debates. La Fayette waited upon the king, and informed him of the proceedings of the day, planted guards in every quarter; and after a ſcanty banquet had been procured for the multitude, he prevailed with the aſſembly to cloſe their ſitting for the night. In this laſt part of his conduct M. la Fayette has been much cenſured, and probably not without reaſon; for it could ſcarcely be expected that ſuch a night would be ſpent in peace by the immenſe aſſemblage of turbulent characters that were now brought together. All was quiet, however, till about ſix in the morning of the 6th, when a great number of women and deſperate perſons ruſhed forward to the palace, and attempted to force their way into it. Two of the gardes du corps were killed; the crowd aſcended the ſtair-caſe leading to the queen's apartment, but were bravely reſiſted by M. Miemandre a ſentinel, who gave the alarm, and defended his poſt till he fell covered with wounds, of which, however, he afterwards fortunately recovered. The ruffians, reeking with his blood, ruſhed into the chamber of the queen, and pierced with bayonets and poinards the bed whence this perſecuted woman had but juſt time to fly almoſt naked, and, through ways unknown to the murderers, had eſcaped to ſeek refuge at the feet of the king, who was already alarmed, and had gone to ſeek her.

65 Deſperate attempt on the queen.

66 The royal family ſaved by Fayette,

The tumult became more violent every moment, and ſudden death ſeemed to threaten the royal family; but La Fayette was by this time at the head of his troops, whom he beſeeched earneſtly to ſave the gardes du corps from maſſacre. In this he was ſucceſsful; ſome that had been taken priſoners were ſurrounded by the grenadiers of the French guards who protected them, and the retreat of the whole corps was eaſily ſecured. The crowd was ſpeedily driven from the different quarters of the palace, which they were already beginning to pillage; and the royal family ventured to ſhow themſelves at a balcony. A few voices now exclaimed, *Le Roi à Paris*, "the King to Paris." The ſhout became general; and the king, after conſulting with La Fayette, declared that he had no objection to take up his reſidence at Paris, provided he was accompanied by the queen and his children. When the propoſal was reported to the aſſembly, the popular leaders expreſſed much ſatisfaction. They ordered a deputation of 100 members to attend the king thither; they voted the national aſſembly inſeparable from the king. His majeſty

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fet out at two o'clock a prifoner in the cuſtody of the mob. Two gentlemen were ſelected from his body guard, and, with all the parade of an execution, beheaded in the court of his palace. Their heads were thrown upon ſpears, and led the proceſſion; whilſt the royal captives who followed in the train, and beheld this ſpectacle, were conducted ſo ſlowly, that a ſhort journey of twelve miles was protracted to ſix hours. The king, the queen, and their children, were lodged in the old palace of the Louvre, while Monſieur went to reſide at the Luxembourg. The city was illuminated, and the evening ſpent in triumph by the Pariſians.

67 Arrive at Paris.

68 Triumph of the Pariſian party.

The removal of the king to Paris was regarded as a triumph by the popular party. The higher order of nobles conſidered it as completely ruinous to their hopes; and even many men of talents, ſuch as Mounier and Lally Tollendal, whom we cannot avoid regarding as friends to the popular cauſe in its outſet, now relinquiſhed every proſpect of attaining a happy conſtitutional freedom as an end, as the national repreſentatives muſt be for ever expoſed to the inſults, and overawed by the influence, of a turbulent capital. Many members of the aſſembly took refuge in foreign countries, and uſed every effort to excite the other nations of Europe to hoſtility againſt France. As the duke of Orleans had been regarded as a chief agent in promoting the late diſturbances, the marquis de la Fayette waited upon him, and inſiſted upon his leaving the kingdom for a time. The duke was overawed, and, on pretence of public buſineſs, went to England, where he remained for ſeveral months.

69 The aſſembly holds its firſt ſeſſion at Paris.

On the 19th of October, the National Aſſembly held its firſt ſeſſion in Paris. The King was cloſely guarded in his own palace; and no apparent oppoſition now ſtood in the way to prevent the popular party from giving to their country ſuch a conſtitution as they might judge expedient. Much, however, was yet to be done, and many difficulties remained, reſulting from the habits of men educated under a very different order of things. Two days after the Aſſembly came to Paris, a baker was publicly executed by the mob, upon a falſe accuſation of having concealed a quantity of bread.—While the Aſſembly was at a diſtance, events of this nature had been little attended to, and the leading party avoided attempting to check theſe ebullitions of popular violence, from which they had derived ſo much advantage; but that party was now all-powerful, and ſo flagrant an offence committed againſt the law was regarded as an inſult upon the ſovereignty of the National Aſſembly. Two leaders of the mob were therefore tried and publicly executed, and a ſevere law was paſſed, of the nature of the Britiſh riot act, authoriſing the magiſtrates to act by military force againſt any multitude of perſons that ſhould refuſe to diſperſe. Thus the peace of the capital was ſecured for ſeveral months; but in the country at large no ſmall degree of anxiety and trouble ſtill prevailed. The ſame ſuſpicious temper which had prevailed at Paris agitated the provinces with the dread of plots and monopolies of grain. Add to this, that the nobleſſe in the country were by no means ſatisfied with the liberality with which their repreſentatives had on the 4th of Auguſt voted away their privileges and their property. This produced violent jealouſies between the peaſants and their lords, and gradually conveyed to every corner of the kingdom the political ferment which had commenced at Paris.

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The National Aſſembly being now, however, in tolerable ſecurity, proceeded in the arduous attempt of forming a free conſtitution for the great empire of France. The Abbé Sieyes preſented a plan for dividing the kingdom into 83 *departments*, of about 342 ſquare leagues, and of each department into ſeveral *diſtricts*, and each diſtrict was ſubdivided into *cantons* of four ſquare leagues in extent. Thus the whole of the ancient diviſions of the kingdom into governments, generalities, and bailiewicks, was in an inſtant obliterated. An attempt was alſo made to ſimplify in an equal degree the relative ſituation of individuals in civil life, by a decree which put an end to all diſtinction of orders and immunities, ſo far as any privilege whatever was concerned. At the ſame time, a bold and moſt important meaſure was adopted, which has ſince proved the organ of thoſe terrible efforts which France has been enabled to make againſt the reſt of Europe. This was the confiſcation of the whole of the lands belonging to the church, for the purpoſe of ſupplying the exigencies of the ſtate. In this tranſaction, all regard to juſtice was thrown aſide. The lands of the church were as certainly the property of the then poſſeſſors of them as any eſtate among us is the property of him who occupies it. The ſtate may have had a right to appropriate to itſelf the church lands upon the death of the incumbents; but it might with equal juſtice, and perhaps greater propriety, have ſeized the enormous revenues of the Duke of Orleans, as have confiſcated a ſingle acre belonging to the moſt uſeleſs abbot without his own conſent. This bold meaſure was propoſed by the biſhop of Autun, M. Talleyrand Perigord, a man who had been promoted to the bench in a moſt irregular manner to ſerve this very purpoſe. The mode in which this property was to be expended was by iſſuing aſſignments (*aſſignats*) upon it; which aſſignments were to be received by the ſtate for the payment of taxes, or for the purchaſe of church lands when ſet up to ſale. A proviſion was at the ſame time made for the national clergy, who were for the future to be paid by the ſtate. On the day following that on which this important meaſure was adopted, a decree was paſſed, ſuſpending the parliaments of the kingdom from the exerciſe of their functions.

70 The kingdom divided into 83 departments.

71 The church lands confiſcated.

72 Fruitleſs attempts of the parliaments.

Decrees, in which the intereſts of ſo vaſt a multitude of individuals were involved, could not be carried into effect without much murmuring and oppoſition. The parliaments, in particular, began to exert themſelves with vigour, and, by proteſts and other publications, attempted to invalidate the decrees of the Aſſembly as illegal; but theſe privileged bodies, who had often been accuſtomed to contend with ſome ſucceſs againſt the deſpotic adminiſtration of their country, and on that account had been for ages the objects of public applauſe, now found themſelves utterly forſaken, and unable to reſiſt the mandate of a popular Aſſembly. After a few fruitleſs ſtruggles, they were all of them under the neceſſity of ſubmitting to their fate.

73 Municipalities eſtabliſhed, &c.

Nothing remarkable now occurred for ſome time.—The aſſembly proceeded to organize the kingdom by the eſtabliſhment of municipalities, and by reforming the juriſprudence of the country. It is to be obſerved, however, that when the parliament of Paris was abo-

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lished, the Chatelet, being the second court in that city, was retained for the purpose of trying those persons who had become most obnoxious by their attachment to the royal cause. This court had the spirit to acquit the Baron de Bezenval, Marshal Broglio, and the Prince de Lambesq. But having incurred much popular odium on this account, they were guilty of the unworthy meanness of condemning to death the Marquis de Favres, for a pretended conspiracy (of which no tolerable proof was ever brought) to massacre La Fayette, Bailly, and Neckar, and to convey the King to Peronne.

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During the whole of this winter the King had been very strictly watched by numerous guards placed around his palace, insomuch that the other nations of Europe considered him as in a state of captivity. To do away this impression, if possible, and to make their king appear a voluntary agent in the measures that had lately been adopted, was now regarded as a matter of some importance. Every effort was therefore made to prevail with him to come to the Assembly suddenly, and, as it were, of his own voluntary motion, there to declare his adherence to the measures which had lately been adopted. For some time he resisted this proposal; but at length, on the 4th of February, he did suddenly appear in the National Assembly, where he complained of the attempts that had been made to shake the new constitution. He declared his wish "that it should be universally known that the monarch and the representatives of the nation were united, and their wishes were the same; that he would defend the constitutional liberty of the state; that, in conjunction with the Queen, he would early form the sentiments of his son for that new order of things which the circumstances of the empire had introduced." This declaration dispirited the aristocratic party in no small degree, and increased that unhappy tendency of looking for aid from foreign countries which they had always been too apt to indulge.

74 Monasteries suppressed, and their lands confiscated.

On the 13th of February, monastic establishments were suppressed, and their lands confiscated; but the present friars and nuns were allowed pensions for their subsistence, and to continue the observance of their monastic vows, if they thought fit. We may observe here, that, in consequence of the evacuation of the monasteries, it is probable that about this time the *Breton* committee began to assume the appellation of the *Jacobin Club*, from the hall belonging to the Jacobin friars at Paris, in which their meetings were now held.

March 15th.

75 The Red Book, or list of pensions and donations, published.

An event occurred at this time which tended in no small degree to increase the odium under which the old government already laboured. This was the publication of the *Red Book*, or list of pensions and donations granted by the crown. In consequence of the most pressing instances, it had been communicated by M. Neckar to a committee of the Assembly, after many intreaties, and the most solemn promises of secrecy. It afforded, however, too striking an advantage to the popular party not to be made use of, and in a few days M. Neckar, to his no small surprise, saw this register publicly sold by every bookseller in Paris. He ought not, indeed, to have been surprised; and the giving up of this list is one of the many proofs which the transactions of that period afford of his great unfitness for the office which he held. With much indignation, however, he demanded why the committee had published it without the permission of the Assembly or the King? But he was told by the committee, that "as to the Assembly, they were sure of its approbation; and as to the King, they were not his representatives." To give an idea of the effect of this publication, it is only necessary to remark, that, under the short administration of M. Calonne, the two brothers of the King had received from the public treasury, independent of their legitimate income, nearly two millions sterling, and that L. 600,000 had been granted to an individual, because he was the husband of Madame de Polignac. M. Neckar's opposition to this publication tended in no small degree to injure his popularity, and the rest of the ministry began to lose the confidence of the public. Indeed, at this time, fertile causes of alarm prevailed on all sides. The clergy were attempting to revive in the provinces the ancient animosities between the Roman Catholics and the Protestants, ascribing the late decrees of the Assembly to the latter. The German princes who possessed property in the north of France were complaining loudly of the violation of their rights by the abolition of the feudal system, although the National Assembly had voted to them a compensation. The most melancholy intelligence was received from their colonies in the West Indies. In regulating these, the Assembly had not recognized the right of the free Negroes to enjoy the same privileges with other citizens; at the same time, they did not go the length of denying these privileges. This uncertain conduct produced infinite calamities. The whites contended with those commonly called *people of colour*. These again sometimes stood in opposition to the free negroes, or to the slaves; and hence it sometimes happened that no less than three hostile assemblies were held at the same time in the same colony, which made war upon each other with the most inveterate fury. Each party found protectors in the National Assembly of the parent state. Those who favoured or opposed the existence of distinctions at home, in general followed out the same principle with regard to the colonies.

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76 Effect of its publication.

77 Numerous sources of alarm.

78 Debate on the royal power to declare peace and war.

On the 14th of May, M. de Montmorency communicated to the National Assembly the preparations for war in which England and Spain were engaged. This brought forward the constitutional question, "Who ought to possess the power of declaring peace and war?" The Count Clermont Tonnerre, Messrs de Serent, Virieu, and Dupont, supported the royal prerogative; while on the other side, the exclusive right of the legislative body to exercise this important prerogative was supported by Messrs d'Aiguillon, Garat jun. Freteau, Jellot, Charles Lameth, Sillery, Petion, Robespierre, &c. M. Petion proposed a decree "that the French nation renounced for ever all idea of conquest, and confined itself entirely to defensive war;" which was passed with universal acclamation. The Count de Mirabeau at length successfully proposed that peace and war should be declared by the king and the legislative body in conjunction; and the decree that was passed on the subject is a strange farrago of contradictions and absurdities. It enjoined the King to "guard the state from external attacks." But how could this be done, without repelling any attack that might be made upon it? This, however, he could not do, without previously informing the National Assembly; and if that body chanced

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not to be ſitting at the time, he was bound to let the enemy advance without oppoſition till he had convened his council, aſſembled over 24,000 ſquare leagues, and listened to their metaphyſical quibbles in Paris.

79 Farce acted in the Aſſembly by a Pruſſian refugee, &c.

On the 19th of June, a very ſingular farce was acted in the Aſſembly. A Pruſſian refugee, who called himſelf Anacharſis Cloots, and who was ſtruggling hard to bring himſelf into public notice, on an evening ſitting (which, it is to be obſerved, was generally filled by the perſons of the loweſt rank), introduced to the Aſſembly a number of perſons dreſſed in the different habits of all the different countries that could be thought of. In a formal harangue, he told the Aſſembly that he was come, as the *orator of the human race*, at the head of the repreſentatives of all nations, to congratulate them upon the formation of their new conſtitution. He was anſwered by the Preſident with abundance of ſolemnity, and retired with his motley groupe. This fantaſtical piece of folly, which in any other country than France would ſcarcely, perhaps, have excited a ſmile, was treated by the Aſſembly in a ſerious light. Alexander Lameth propoſed, that the figures of different nations exhibited in chains at the feet of Louis XIV. ſhould be deſtroyed as an inſult upon mankind.

80 Abolition of hereditary titles.

M. Lambel, a lawyer, at this moment propoſed the *abolition of all hereditary titles*. He was ſupported by La Fayette, St Fargeau, and the Viſcount de Noailles. The decree was paſſed, along with another ſuppreſſing all armorial bearings. It is our intention at preſent rather to ſtate facts than to hazard any political opinion concerning the wiſdom or folly of the tranſactions which we record. It may here, however, be remarked, that no part of the proceedings of the French National Aſſembly was received by perſons of rank upon the Continent of Europe with ſo much indignation as this.—The feudal ſyſtem had been overturned, and the property of the church wreſted from it, with little comparative notice; but when thoſe nominal diſtinctions were attacked which antiquity had ſanctioned, and perſonal vanity rendered dear, the ſurrounding nations were inſtantly alarmed, and beheld with terror the levelling precedent. We may likewiſe add, that this part of their proceedings was conſidered inimical to rational and practical freedom. To preſerve a perfect equality of ranks is impoſſible. In a commercial nation, induſtry will procure wealth, and wealth will every where procure dependents. It is alleged nothing more contributes to keep within ſome tolerable bounds the inſolence of newly acquired wealth, than the rank attached to birth and nobility, which time and prejudice have conſpired to make reſpectable. It is not a little remarkable, that of all the King's miniſters, Neckar alone, a plebeian, a republican, born and bred in a democracy, adviſed his Majeſty to refuſe his aſſent to this fooliſh decree, as a violent but uſeleſs encroachment upon the prejudices of a powerful order of the ſtate.

81 Propoſal to commemorate the taking of the Baſtile.

In the mean time, the capital was entirely engroſſed by hurry and buſtle. M. Bailly had propoſed a plan for commemorating the anniverſary of the taking of the Baſtile. It was adopted, becauſe it flattered the vanity of the people, by preſenting them with a ſplendid ſpectacle in commemoration of their own exertions. —The army had been much diſorganized; and it was reſolved to attempt to unite all its branches, as well as the whole departments of the ſtate, in one common attachment to the new order of things, by collecting into one place deputations, for the purpoſe of ſwearing fidelity to the new conſtitution. In the middle of the Champ de Mars an altar was erected, at which the civic oath, as it was called, was to be taken. Around the altar an amphitheatre was thrown up capable of containing 400,000 ſpectators; 2000 workmen were employed in this operation; and the people of Paris, fearing leſt the plan might not be completed, aſſiſted in the labour. All ranks of perſons, the nobles, clergy, and even ladies, with the eagerneſs for novelty ſo peculiar to that people, united their efforts. Crowds of foreigners as well as natives hurried to the capital to be preſent at this ſolemnity, which was called the *Confederation*. The long-expected 14th of July at length arrived. At ſix o'clock in the morning the proceſſion was arranged on the Boulevards, and conſiſted of the electors of the city of Paris, the repreſentatives of the commons, the adminiſtrators of the municipality, a battalion of children, with a ſtandard, inſcribed "The hopes of the nation;" deputies from the troops of France wherever quartered, and of every order, along with deputies from all the departments; to theſe were added immenſe detachments of the military, and of the national guards, along with an almoſt infinite multitude of drums, trumpets, and muſical inſtruments. The proceſſion was extremely ſplendid, as every diſtrict had its peculiar decorations. The national aſſembly paſſed through a grand triumphal arch, and the king and queen, attended by the foreign miniſters, were placed in a ſuperb box. After a ſolemn invocation to God, the King approached the altar, and, amidſt the deepeſt ſilence, took the following oath: "I the King of the French do ſwear to the nation, that I will employ the whole power delegated to me by the conſtitutional law of the ſtate, to maintain the conſtitution, and enforce the execution of the law." The preſident of the national aſſembly then went up to the altar, and took the civic oath, "I ſwear to be faithful to the nation, the law, and the king; and to maintain with all my powers the conſtitution decreed by the national aſſembly, and accepted by the king." Every member of the aſſembly ſtanding up, ſaid, "That I ſwear." La Fayette then advancing, took the oath for himſelf; the other deputies of the national guards pronouncing after him, "That I ſwear;" and theſe words were ſolemnly pronounced by every individual of this immenſe aſſembly. *Te Deum* was then ſung. The performance was ſublime beyond the powers of deſcription. Never perhaps before was there ſuch an orcheſtra, or ſuch an audience: their numbers baffled the eye to reckon, and their ſhouts in full chorus rent the ſkies. It is impoſſible to enumerate all the means which were employed to add ſplendor to this day. It ended with a general illumination, and no accident diſturbed the public tranquillity.

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82 Ceremony of the confederation.

83 The ſoldiers at Nancy diſguſted, and the conſequences.

The aſſembly now proceeded in the formation of the conſtitution with conſiderable tranquillity; which, however, was diſturbed by an unhappy event at Nancy. Moſt of the officers of the army were unfriendly to the late revolution, and every means had been employed by them to diſguſt the ſoldiers with it. At Nancy, in particular, neceſſaries had been denied them, and their pay was kept back, under pretence that this was the will of the national aſſembly. Driven to deſpair, the regiments in garriſon threw off their allegiance, and demanded

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manded loudly the regimental accounts. They ſeized at the ſame time the military cheſt, and ſent a deputation to ſtate their caſe at Paris to the national aſſembly. But the officers were before-hand, and prepoſſeſſed the miniſter of war againſt them; upon whoſe repreſentation a decree was paſſed, authoriſing the commander in chief of the province, M. Bouillé, to reduce the inſurgents by force. This was no ſooner known, than the national guard of Nancy aſſembled, and ſent a deputation to give a fair ſtatement of facts. But Bouillé, without waiting the reſult of an explanation, haſtened to Nancy at the head of all the troops he could ſuddenly collect; and having fallen upon the regiments of Chateauvieux and Meſtre de Camp, after putting an immenſe multitude to the ſword, he took 400 priſoners.

The King's regiment was prevented from acting againſt Bouillé by the intrepidity of a young officer of the name of *Deſſilles*, who, however, died of the wounds which he received on the occaſion. The news of theſe events filled Paris with indignation. The aſſembly afterwards reverſed its own decrees againſt the inſurgents at Nancy. Public honours were decreed to the memory of Deſſiles; but Bouillé could not be puniſhed, becauſe he had only acted in obedience to authority.

84 M. Neckar reſigns, and leaves the kingdom without being regretted.

M. Neckar's popularity had been gradually declining, as he was unwilling to go all the lengths that the ruling party wiſhed. He gave in his reſignation on the 4th of September, and ſpeedily thereafter left the kingdom. He was regretted by no party. He was regarded, on the one ſide, as having conducted the kingdom to its ruin, by the conceſſions which he originally adviſed the king to make in favour of the *tiers etat*; while he was deſpiſed by the oppoſite party as a lukewarm politician, of narrow views, and a feeble mind. He departed, however, with the unblemiſhed reputation of ſtrict integrity. M. Neckar does not ſeem to have penetrated deeply into the characters of men, or to have had any conception of the effects of that terrible and reſtleſs energy which is called forth in a nation which attempts to make important changes in its ancient manners and government. Having no conception of the important era which was about to open upon that country of which he was the miniſter, he was far from being qualified to direct or controul it amidſt the convulſions which it was deſtined to encounter. Unable to brook the loſs of his popularity, he peeviſhly retired to Swiſſerland, where he publiſhed a work, which ſhows to the conviction of every unprejudiced reader the integrity of the French king, and the wicked projects of the leading democrates, whom he himſelf had armed with power.

85 Attempts to re-organiſe the navy.

The remaining part of this year was occupied in attempts to introduce ſome degree of ſubordination into the navy of France, which had been much diſorganized, and in farther regulating the affairs of the clergy. It was now declared, that ſuch clergymen as ſhould not take the following oath, which had been preſcribed ſome months before, ſhould be conſidered as ejected from their benefices: "To watch carefully over the faithful in the pariſh or dioceſe which was entruſted to his care; to be faithful to the nation, the law, and the king; and to maintain to the utmoſt of his power the new conſtitution of France, and particularly the decrees relative to the civil conſtitution of the clergy." This decree rendered the ſituation of conſcientious men extremely perplexing; eſpecially as the pope teſtified in marked terms his diſapprobation of the oath. The people were reduced to the dilemma of chooſing between their new political and their old religious prejudices; and the reſult was extremely unfavourable to the intereſt of religion. French Revolution

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86 Hoſtile appearances in Germany, &c.

The aſſembly commenced the new year with a decree, announcing the termination of its ſeſſion, which was to take place as ſoon as it ſhould have finiſhed the diſcuſſion of a liſt of conſtitutional articles. In the mean time, on the ſide of Germany, Spain, Italy, and Savoy, hoſtile appearances began to be exhibited, and bodies of troops advanced around the French frontier. The Emperor Leopold was, however, too cautious to announce his intentions; and the King ſoon communicated a letter from him, containing proteſtations of amicable diſpoſitions, but adding, that "the innovations occaſioned by the decrees of the 4th of Auguſt ought to be done away." The king treated this merely as an official meaſure on the part of the Emperor, that he might not appear to renounce the claims of certain German princes connected with Lorraine and Alſace. But the aſſembly expreſſed ſome alarm, and voted an augmentation of the national force. About this period ſeveral new efforts were made by the diſaffected clergy in various parts of the kingdom to excite diſturbances, which it is unneceſſary to mention in detail.

87 Departure of the king's aunts from Paris.

On the 20th of February the public attention was rouſed by a circumſtance that in any other ſtate of affairs would have been accounted unimportant. The King announced to the aſſembly, that his aunts, the daughters of Louis XV. had that morning left Paris; but as he did not apprehend that the exiſting laws laid them under any reſtraint in this reſpect, he had not oppoſed their departure. After ſome debate, the aſſembly agreed that the King had judged well; and theſe princeſſes were left to purſue their journey to Rome, which they reached after ſome delays occaſioned by the jealouſy of certain municipalities through which they paſſed. Thus the kingdom was gradually deſerted by every branch of the royal family, excepting the King and his eldeſt brother Monſieur. The aſſembly, however, continued its labours with conſiderable quietneſs.

88 Death of Mirabeau.

In the end of the month of March died the celebrated M. de Mirabeau, at the age of 42 years; a man whoſe integrity has for many good reaſons been much ſuſpected, but whoſe political addreſs and intrepidity, and whoſe ſplendid powers of eloquence, have been ſeldom equalled. He received from his countrymen at his death marks of reſpect unparalleled in modern hiſtory. During his ſhort illneſs, his door was beſieged by anxious citizens. A mourning of eight days was decreed by the aſſembly, and alſo a grand proceſſion, which was attended by all the public functionaries. He was the firſt who was interred in the new magnificent Pantheon, conſecrated to the reception of the remains of illuſtrious men. But his aſhes were afterwards removed, in conſequence of very clear proofs that he had not been incorruptible by money.

89 An emigrant army aſſembled n the borders of Alſace.

During the whole of this ſpring, much fear was entertained that ſome attempts at a counter revolution were about to be made. The emigrant army aſſembled on the borders of Alſace was reviewed by the prince of Condé. Their uniform was black, faced with yellow, with

[illegible] with a death's head, surrounded by a laurel wreath on one cuff, and a sword on the other; with the motto, "Conquer or die." The king was also surrounded by crowds of [illegible] priests and other disaffected persons. Thus, that popular jealousy which in every period of the revolution has strikingly marked the French character, was kept on the alarm. On the 18th of April, therefore, when the royal family was preparing to go to St Cloud to pass some days, a report was instantly spread that the king was about to fly from the country. The carriages were immediately surrounded by people. La Fayette drew out the national guard, but they refused to act. "We know (exclaimed they) that we are violating the laws, but the safety of our country is the first law." The King instantly went to the assembly, and with much spirit complained of the insult. He was answered respectfully by the president, and continued his journey. As the royal family had enjoyed a considerable degree of freedom for some time past, which was demonstrated by the unsuccessful opsition made to this journey—the present opportunity was embraced for intimating to foreign courts his acceptance of the constitution; and all obnoxious persons were dismissed from about his person. The breach of discipline on the part of the national guard on this occasion was so much resented by La Fayette, that he resigned his command. Paris was thrown into consternation; and it was not till after the most universal solicitation that he was prevailed upon to resume his office.

[illegible] of Bouillé [illegible] frontiers.

About this time M. de Bouillé, to whom the protection of the frontiers was entrusted, was employing, as it is now said, every means in his power to render the country defenceless. The garrisons were left unprovided; dissension was spread among the national troops; they were removed from the frontiers, and their place was occupied by foreigners, wherever it could be done. The emigrants abroad, and their friends at home, were lying in wait for an opportunity of revolt;—when suddenly, on the 21st of June, it was announced from the Thuilleries, that the king, the queen, the dauphin, with monsieur and madame, had quitted the palace and the capital, without leaving any information of their intention or their route. The emotion excited by this news among the multitude was a mixture of consternation and rage. The national assembly, however, acted with much coolness. They instantly took upon themselves the government, and decreed their sittings permanent. They sent messengers, at the same time, in all directions, to attempt to lay hold of the fugitives. These had taken different routs. Monsieur and madame arrived safely at Brussels on the 23d. The king, queen, and their children, when they came to a considerable distance from the capital, were furnished by Bouillé with a guard of dragoons, under pretence of protecting treasure for the pay of the troops. At the distance of 156 miles, and when only a few leagues from the frontiers, they were arrested at St Menehould by the postmaster, M. Drouet, formerly a dragoon in the regiment of Condé. At half past seven o'clock in the evening the carriages stopt to change horses at his house; he thought he recollected the queen, and imagined that the king's face resembled the impressions stamped upon assignats. The escort of dragoons increased the suspicion. He suffered them to depart at 11 o'clock without notice; but taking a companion with him, he went by a shorter road to Varennes. With the assistance of the postmaster there he gave the alarm, and overturned a carriage on the bridge, which detained the royal travellers till the national guard of the place had assembled, and the arrest was effected without bloodshed. They were brought back to Paris by a deputation from the assembly. At his departure, the king had imprudently left behind him a memorial, in which he declared, that he never had thought any sacrifice too great for the restoration of order; but that the destruction of the kingdom, and the triumph of anarchy, being the only reward of all his efforts, he thought it necessary to depart from it. He then takes a review of the faults of the new constitution, the grievances he has suffered; and protests against every thing that he had been compelled to do during his captivity.

92 The king, queen, and royal family, leave Paris.

93 Monsieur and madame arrive at Brussels

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94 The king and queen arrested at Varennes.

95 Consequences of this unfortunate flight.

Different parties were very differently affected by this ill-conducted and unfortunate flight of the King. A small republican party had already begun to appear, and during the king's absence, attempts were made to induce the public at large to consider the royal authority as no necessary part of a free constitution. But the minds of men were by no means prepared for the reception of this new doctrine. The idea, however, having been thus publicly proposed, left some impressions, which in time contributed to give rise to important events. By far the greater number of leading men, however, were at present convinced, that it was impossible to conduct a great empire like France, well and prosperously, without the assistance of an hereditary chief. They therefore determined to pass over the affair with as much silence as possible, and to hasten the period when their new constitution should be complete. But there is reason to believe, that this journey was at the long-run highly instrumental in producing very fatal effects to the personal safety of the monarch.

His flight seemed a signal for emigration. Many of the aristocratic party sent in resignations of their seats in the national assembly. Troops were levied on the frontiers in the King's name; who took care, however, to disavow any connection with such a procedure. Bouillé emigrated, and afterwards sent to the assembly a furious threatening letter: "You shall answer (says he) for the lives of the king and of the queen to all the monarchs of the universe. Touch but a single hair of their heads, and not one stone shall be left upon another in Paris. I know the roads. I will conduct the foreign armies. This letter is but the forerunner of the manifesto of the sovereigns of Europe."

A considerable calm throughout France followed these events, and it might be regarded as in a state of tranquillity. It contained, indeed, parties entertaining much animosity against each other, and many citizens had withdrawn to foreign countries; but the peace was not broken, and moderate men hoped that much prosperity would follow from the late agitations. But this calm was delusive: and in the midst of it those projects were formed which were afterwards to prove so fatal to the peace of France and of Europe. Towards the close of this summer, a convention took place at Pilnitz in Saxony between the emperor Leopold and the king of Prussia. Its object was not known at the time, but it gradually came into view, and is now by many understood

96 Treaty of Pilnitz.

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ſtood to have been intended for the purpoſe of concluding a league for the invaſion of France, the new-modelling of its government, and the partition of ſome of its fairеſt provinces. The following paper has been repeatedly publiſhed as the copy of a treaty concluded and ſigned at Pavia, and is generally underſtood to have been identical with, and therefore known by, the name of the *Treaty of Pilnitz*. We are far from vouching for its authenticity. It may have been fabricated by the French aſſembly, to unite all parties in the nation againſt the foreign powers which threatened to invade them. But in ſtating the events of this revolution, it is perhaps ſtill more neceſſary, for the purpoſe of rendering the actions of men comprehenſible, to give an account of what was at the time *believed* to have occurred, than it now is to aſcertain what was actually true.

Partition Treaty between the Courts in Concert, concluded and ſigned at Pavia, in the Month of July 1791.

His majeſty the emperor will take all that Louis XIV. conquered in the Auſtrian Netherlands, will give them to his ſerene highneſs the elector Palatine; ſo that theſe new poſſeſſions, added to the Palatinate, may hereafter have the name of *Auſtraſia*.

His majeſty will preſerve for ever the property and poſſeſſion of Bavaria, to make in future an indiviſible maſs with the domains and hereditary poſſeſſions of the houſe of Auſtria.

Her ſerene highneſs the archduchеſs Maria Chriſtina ſhall be, conjointly with his ſerene highneſs her nephew the archduke Charles, put into hereditary poſſeſſion of the duchy of Lorraine.

Alſace ſhall be reſtored to the empire; and the biſhop of Straſbourg, as well as the chapter, ſhall recover their ancient privileges, and the eccleſiaſtical ſovereigns of Germany ſhall do the ſame.

If the Swiſs Cantons conſent to accede to the coalition, it may be propoſed to them to annex to the Helvetic league the biſhopric of Porentrui, the defiles of Franche Comté, and even thoſe of Tyrol, with the neighbouring bailiwicks, as well as the territory of Verſoy, which interſects the Pays de Vaud.

Should his majeſty the king of Sardinia ſubſcribe to the coalition, La Breſſe, Le Bugey, and the Pays de Gex, uſurped by France from Savoy, ſhall be reſtored to him.

In caſe his Sardinian majeſty can make a grand diverſion, he ſhall be ſuffered to take Dauphiné, to belong to him for ever as the neareſt deſcendant of the ancient dauphins.

His majeſty the king of Spain ſhall have Rouſſillon and Bearn, with the iſland of Corſica; and he ſhall have the French part of the iſland of St Domingo.

Her majeſty the empreſs of all the Ruſſias ſhall take upon herſelf the invaſion of Poland, and at the ſame time retain Kaminiech, with that part of Podolia which borders on Moldavia.

His majeſty the emperor ſhall oblige the Porte to give up Choczim, as well as the ſmall forts of Servia, and thoſe on the river Lurna.

His majeſty the king of Pruſſia, by means of the abovementioned invaſion of the empreſs of all the Ruſſias into Poland, ſhall make an acquiſition of Thorn and Dantzic, and there unite the Palatinate on the eaſt of the confines of Sileſia.

His majeſty the king of Pruſſia ſhall beſides acquire Luſace; and his ſerene highneſs the elector of Saxony ſhall in exchange receive the reſt of Poland, and occupy the throne as hereditary ſovereign.

His majeſty the preſent king of Poland ſhall abdicate the throne on receiving a ſuitable annuity.

His royal highneſs the elector of Saxony ſhall give his daughter in marriage to his ſerene highneſs the youngeſt ſon of his royal highneſs the grand duke of all the Ruſſias, who will be the father of the race of the hereditary kings of Poland and Lithuania. (Signed) Leopold. Prince Naſſau. Count Florida Blanca. Biſchoffswerder.

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9 The new conſtitution concluded by the aſſembly.

In the mean time, the national aſſembly was haſtening faſt to the completion of the new conſtitution. It was finiſhed on the 3d of September, and preſented to the king. It begins with the following declaration of the rights of a man and a citizen, and thereafter follow the different branches; the chief of which are here tranſlated.

I. All men are born, and remain, free and equal in rights: ſocial diſtinctions cannot be founded but on common utility.

II. The end of all political aſſociations is the preſervation of the natural and impreſcriptible rights of man: theſe rights are liberty, property, ſecurity, and reſiſtance againſt oppreſſion.

III. The principle of *ſovereignty* reſides eſſentially in the nation: *no body* of *men*, no *individual*, can exerciſe an authority that does not emanate expreſsly from that ſource.

IV. *Liberty* conſiſts in the power of doing every thing except that which is hurtful to another: hence the exerciſe of the natural rights of every man has no other bounds than thoſe that are neceſſary to enſure to the other members of ſociety the enjoyment of the ſame rights: thoſe bounds can be determined by the law only.

V. The law has a right to forbid thoſe actions alone that are hurtful to ſociety. Whatever is not forbidden by the law, cannot be hindered; and no perſon can be conſtrained to do that which the law ordaineth not.

VI. The law is the expreſſion of the general will: all the citizens have a right to concur perſonally, or by their repreſentatives, to the formation of the law: it ought to be the ſame for all, whether it protect, or whether it puniſh. All citizens being equal in the eye of the law, are equally admiſſible to dignities, places, and public offices, according to their capacity, and without any other diſtinction but that of their virtue and their talents.

VII. No man can be accuſed, arreſted, or detained, except in caſes determined by the law, and according to the forms which the law hath preſcribed. Thoſe who ſolicit, diſpatch, execute, or cauſe to be executed, arbitrary orders, ought to be puniſhed; but every citizen that is ſummoned or ſeized in virtue of the law, ought to obey inſtantly—he becomes culpable by reſiſtance.

VIII. The law ought to eſtabliſh ſuch puniſhments only as are ſtrictly and evidently neceſſary; and no perſon can be puniſhed but in virtue of a law eſtabliſhed and promulgated prior to the offence, and legally applied.

XI. Every man being preſumed innocent till ſuch

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time to be has been declared guilty, if it shall be deemed absolutely necessary to arrest a man, every kind of rigour employed, not necessary to secure his person, ought to be severely repressed by the law.

X. No person shall be molested for his opinions, even such as are religious, provided that the manifestation of those opinions does not disturb the public order established by the law.

XI. The free communication of thought, and of opinion, is one of the most precious rights of man. Every citizen, therefore, may freely speak, write, and publish, his sentiments; subject, however, to answer for the abuse of that liberty, in cases determined by the law.

XII. The guarantee of the Rights of Man and Citizens, involves a necessity of *public force*: this force is then instituted for the advantage of all, and not for the particular utility of those to whom it is confided.

XIII. For the maintenance of public force, and for the expences of administration, a common contribution is indispensably necessary: this contribution should be equally divided amongst all the citizens, in proportion to their abilities.

XIV. Every citizen has a right, by himself, or by his representatives, to decide concerning the necessity of the public contribution; to consent to it freely; to look after the employment of it; to determine the quantity, the distribution, the collection, and duration.

XV. The society has a right to demand from every public agent an account of his administration.

XVI. Every society, in which the guarantee of rights is not assured, nor the separation of powers determined, has *no constitution*.

XVII. Property being a right inviolable and sacred, no person can be deprived of it, except when the public necessity, legally ascertained, shall evidently require it, and on condition of a just and previous indemnification.

The constitution guarantees, as natural and civil rights,

1. That all citizens are admissible to places and employments without any distinction, but that of ability and virtue.

2. That all contributions shall be divided equally among all the citizens, in proportion to their means.

3. That the same crimes shall be subject to the same punishments, without any distinction of persons.

The constitution in like manner guarantees, as natural and civil rights,

Liberty to all men of going, staying, or departing, without being arrested, or detained, but according to the forms prescribed by the constitution.

Liberty to all men of speaking, writing, printing, and "publishing their thoughts, without having their writings subjected to any examination or inspection before publication;" and of exercising the religious worship to which they are attached.

Liberty to all citizens of assembling peaceably, and without arms, complying with the laws of police.

Liberty of addressing to all constitutional authorities petitions individually signed.

The constitution guarantees the inviolability of property, or a just and previous indemnity for that of which public necessity, legally proved, shall require the sacrifice.

A public instruction shall be created and organized, common to all citizens, gratuitous with regard to those parts of tuition indispensable for all men, and of which the establishment shall be gradually distributed in a proportion combined with the division of the kingdom.

"The kingdom is one and indivisible;" its territory, for administration, is distributed into 83 departments, each department into districts, each district into cantons.

Those are French citizens,

Who are born in France, of a French father;

Who having been born in France of a foreign father, have fixed their residence in the kingdom;

Who having been born in a foreign country, of a French father, have returned to settle in France, and have taken the civic oath:

In fine, who having been born in a foreign country, being descended in whatever degree from a Frenchman or a Frenchwoman, who have left their country from religious motives, come to reside in France, and take the civic oath.

The right of French citizenship is lost,

1st, By naturalization in a foreign country;

2dly, By being condemned to penalties which involve the civic degradation, provided the person condemned be not reinstated;

3dly, By a sentence of contumacy, provided the sentence be not annulled;

4thly, By initiation into any foreign order or body which supposes either proofs of nobility "or distinctions of birth, or requires religious vows."

"The law considers marriage only as a civil contract."

The sovereignty is one, indivisible, "inalienable, and imprescriptible," and it belongs to the nation: no section of the people, or individual, can arrogate the exercise of it.

The nation, from which alone flow all powers, cannot exercise them but by delegation.

The French constitution is representative: the representatives are the legislative body and the king.

The National Assembly, forming the legislative body, is permanent, and consists of one chamber only.

It shall be formed by new elections, every two years.

The legislative body cannot be dissolved by the king.

The number of representatives to the legislative body shall be 745, on account of the 83 departments of which the kingdom is composed; and independent of those that may be granted to the colonies.

The representatives shall be distributed among the 83 departments, according to the three proportions of land, of population, and the contribution direct.

Of the 745 representatives 247 are attached to the land. Of these each department shall nominate three, except the department of Paris, which shall nominate only one.

Two hundred and forty-nine representatives are attached to the population. The total mass of the active population of the kingdom is divided into 249 parts, and each department nominates as many of the deputies as it contains parts of the population.

Two hundred and forty-nine representatives are attached to the contribution direct. The sum total of the direct contribution of the kingdom is likewise divided into 249 parts; and each department nominates as many deputies as it pays parts of the contribution.

In

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In order to form a legiſlative national aſſembly, the active citizens ſhall convene, in primary aſſemblies, every two years in the cities and cantons.

"The primary aſſemblies ſhall meet of full right on the firſt Sunday of March, if not convoked ſooner by the public officers appointed to do ſo by the law."

To be an active citizen, it is neceſſary,

To be a Frenchman, or to have become a Frenchman;

To have attained 25 years complete;

To have reſided in the city or the canton from the time determined by the law;

To pay in any part of the kingdom a direct contribution, at leaſt equal to the value of three days labour, and to produce the acquittance;

Not to be in a menial capacity, namely, that of a ſervant receiving wages;

To be inſcribed in the municipality of the place of his reſidence in the liſt of the national guards;

To have taken the civic oath.

The primary aſſemblies ſhall name electors in the proportion of the number of active citizens reſiding in the city or canton;

There ſhall be named one elector to the aſſembly, or not, according as there ſhall happen to be preſent 100 active citizens.

There ſhall be named two, when there ſhall be preſent from 151 to 250, and ſo on in this proportion.

The electors named in each department ſhall convene, in order to chooſe the number of repreſentatives, whoſe nomination ſhall belong to their department, and a number of ſubſtitutes equal to the third of the repreſentatives.

"The aſſemblies ſhall be held of full right on the laſt Sunday of March, if they have not been before convoked by the public officers appointed to do ſo by law."

All active citizens, whatever be their ſtate, profeſſion, or contribution, may be choſen repreſentatives of the nation.

Excepting, nevertheleſs, the miniſters and other agents of the executive power, &c.

The members of the legiſlative body may be re-elected to a ſubſequent legiſlature, but not till after an interval of one legiſlature.

No active citizen can enter or vote in an aſſembly if he is armed.

The repreſentatives ſhall meet on the firſt Monday of May, in the place of the ſittings of the laſt legiſlature.

The royalty is indiviſible, and delegated hereditarily to the race on the throne from male to male, by order of primogeniture, to the perpetual excluſion of women and their deſcendants.

Nothing is prejudged on the effect of renunciations in the race on the throne.

The perſon of the king is inviolable and ſacred; his only title is king of the French.

If the king put himſelf at the head of an army, and direct the forces of it againſt the nation, or if he do not oppoſe, by a formal act, any ſuch enterpriſe undertaken in his name, he ſhall be held to have abdicated.

If the king having gone out of the kingdom, do not return to it, after an invitation by the legiſlative body, within the ſpace which ſhall be fixed by the proclamation, "and which cannot be leſs than two months," he ſhall be held to have abdicated the royalty.

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After abdication, expreſs or legal, the king ſhall be in the claſs of citizens, and may be accuſed and tried like them, for acts poſterior to his abdication.

The nation makes proviſion for the ſplendour of the throne by a civil liſt, of which the legiſlative body ſhall fix the ſum at the commencement of each reign, for the whole duration of that reign.

The king is a minor till the age of 18 complete; and during his minority there ſhall be a regent of the kingdom.

The regency belongs to the relation of the king, next in degree according to the order of ſucceſſion to the throne who has attained the age of 25; provided he be a Frenchman reſident in the kingdom, and not preſumptive heir to any other crown, and have previouſly taken the civic oath.

The preſumptive heir ſhall bear the name of *Prince Royal*.

"The members of the king's family called to the eventual ſucceſſion of the throne, ſhall add the denomination of *French Prince* to the name which ſhall be given them in the civil act proving their birth; and this name can neither be patronymic nor formed of any of the qualifications aboliſhed by the preſent conſtitution."

"The denomination of *prince* cannot be given to any individual, and ſhall not carry with it any privilege or exception to the common right of all French citizens."

To the king alone belongs the choice and diſmiſſion of miniſters.

"The members of the preſent national aſſembly, and of the ſubſequent legiſlatures, the members of the tribunal of appeal, and thoſe who ſhall be of the high jury, cannot be advanced to the miniſtry, cannot receive any place, gift, penſion, allowance, or commiſſion of the executive power or its agents during the continuance of their functions, or during two years after ceaſing to exerciſe them: the ſame ſhall be obſerved reſpecting thoſe who ſhall only be inſcribed on the liſt of high jurors as long as their inſcription ſhall continue."

No order of the king can be executed if it be not ſigned by him, and counterſigned by the miniſter or comptroller of the department.

In no caſe can the written or verbal order of a king ſhelter a miniſter from reſponſibility.

The conſtitution delegates excluſively to the legiſlative body the powers and functions following;

To propoſe and decree laws—The king can only invite the legiſlative body to take an object into conſideration;

To fix the public expences;

To eſtabliſh the public contributions, to determine the nature of them, the amount of each ſort, the duration, and the mode of collection, &c.

War cannot be reſolved on but by a decree of the national aſſembly, paſſed on the formal and neceſſary propoſition of the king, and ſanctioned by him.

During the whole courſe of war, the legiſlative body may require the king to negociate peace; and the king is bound to yield to this requiſition.

It belongs to the legiſlative body to ratify treaties of

[illegible] and commerce; and no treaty shall have [illegible] by this [illegible].

The deliberations of the legislative body shall be public, and the minutes of the sitting shall be printed.

The legislative body may, however, on any occasion, form itself into a general committee.

The plan of a decree shall be read thrice, at three intervals, the shortest of which cannot be less than eight days.

The decrees of the legislative body are presented to the king, who may refuse them his consent.

In case of a refusal of the royal consent, that refusal is only suspensive.—When the two following legislatures shall successively present the same decree in the same terms on which it was originally conceived, the king shall be deemed to have given his sanction.

The king is bound to express his consent or refusal to each decree within two months after its presentation.

No decree to which the king has refused his consent can be again presented to him by the same legislature.

The supreme executive power resides exclusively in the hands of the king.

The king is the supreme head of the land and sea forces.

The king names ambassadors, and the other agents of political negociations.

He bestows the command of armies and fleets, and the ranks of marshal of France and admiral:

He names two-thirds of the rear-admirals, one-half of the lieutenant-generals, camp marshals, captains of ships, and colonels of the national gendarmerie:

He names a third of the colonels and lieutenant-colonels, and a sixth of the lieutenants of ships:

He appoints in the civil administration of the marine, the directors, the comptrollers, the treasurers of the arsenals, the masters of the works, the under masters of civil buildings, half of the masters of administration, and the under masters of construction.

He appoints the commissaries of the tribunals:

He appoints the superintendents in chief of the management of contributions indirect, "and the administration of national domains:"

He superintends the coinage of money, and appoints officers entrusted with this superintendence in the general commission and the mints.

The effigy of the king is struck on all the coinage of the kingdom.

There is in each department a superior administration, and in each district a subordinate administration.

The administrators are specially charged with distributing the contributions direct, and with superintending the money arising from the contributions, and the public revenues in their territory.

The king has the right of annulling such acts of the administrators of department as are contrary to the law or the orders transmitted to them.

He may, in case of obstinate disobedience, or of [illegible], by their acts, the safety or peace of the public, suspend them from their functions.

The king alone can interfere in foreign political connections.

Every declaration of war shall be made in these terms: *By the king of the French, by the name of the nation.*

The judicial power can in no case be exercised either by the legislative body or the king.

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Justice shall be gratuitously rendered by judges chosen from time to time by the people, and instituted by letters patent of the king, who cannot refuse them.

"The public accuser shall be nominated by the people."

"The right of citizens to terminate disputes definitively by arbitration, cannot receive any infringement from the acts of the legislative power."

In criminal matters, no citizen can be judged except on an accusation received by jurors, or decreed by the legislative body in the cases in which it belongs to it to prosecute the accusation.

After the accusation shall be admitted, the fact shall be examined, and declared by the jurors.

The person accused shall have the privilege of challenging 20, "without assigning any reason."

The jurors who declare the fact shall not be fewer than 12.

The application of the law shall be made by the judges.

The process shall be public; "and the person accused cannot be denied the aid of counsel."

No man acquitted by a legal jury can be apprehended or accused on account of the same fact.

For the whole kingdom there shall be one tribunal of appeal, established near the legislative body.

A high national court, composed of members of the tribunal of appeal and high jurors, shall take cognizance of the crimes of ministers, and the principal agents of the executive power; and of crimes which attack the general safety of the state, when the legislative body shall pass a decree of accusation.

It shall not assemble but on the proclamation of the legislative body; "and at the distance of 30,000 toises at least from the place of meeting of the legislative body."

The national guards do not form a military body, or an institution in the state; they are the citizens themselves called to assist the public force.

Officers are chosen for a time, and cannot again be chosen till after a certain interval of service as privates.

None shall command the national guard of more than one district.

All the parts of the public force employed for the safety of the state from foreign enemies are under the command of the king.

Public contributions shall be debated and fixed every year by the legislative body, and cannot continue in force longer than the last day of the following session, if they are not expressly renewed.

"Detailed accounts of the expence of the ministerial departments, signed and certified by the ministers or comptrollers-general, shall be printed and published at the commencement of the sessions of each legislature.

"The same shall be done with the statements of the receipt of the different taxes, and all the public revenues."

The French nation renounces the undertaking of any war with a view of making conquests, and will never employ its forces against the liberty of any people.

The constituting national assembly declares, "That the

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the nation has the impreſcriptible right of changing its conſtitution; and nevertheleſs conſidering that it is more conformable to the national intereſt to employ only by means provided in the conſtitution itſelf, the right of reforming thoſe articles of it, of which experience ſhall have ſhown the inconveniences, decrees, that the proceeding by an aſſembly of reviſion ſhall be regulated in the form following:

"When three ſucceſſive legiſlatures ſhall have expreſſed an uniform wiſh for the change of any conſtitutional article, the reviſion demanded ſhall take place.

"The next legiſlature, and the following, cannot propoſe the reform of any conſtitutional article.

"The fourth legiſlature, augmented with 249 members, choſen in each department, by doubling the ordinary number which it furniſhes in proportion to its population, ſhall form the aſſembly of reviſion."

The French colonies and poſſeſſions in Aſia, Africa, and America, "though they form part of the French empire," are not included in the preſent conſtitution.

With reſpect to the laws made by the national aſſembly which are not included in the act of conſtitution, and thoſe anterior laws which it has not altered, they ſhall be obſerved, ſo long as they ſhall not be revoked or modified by the legiſlative power.

98 And accepted by the king.

On the 13th of September the King announced, by a letter to the Preſident of the Aſſembly, his acceptance of the conſtitution. This event was ordered to be notified to all the foreign courts, and the Aſſembly decreed a general amneſty with reſpect to the events of the revolution. On the following day the King repaired in perſon to the National Aſſembly; and being conducted to a chair of ſtate prepared for him at the ſide of the Preſident, he ſigned the conſtitutional act, and took an oath of fidelity to it. He then withdrew, and was attended back to the Thuilleries by the whole Aſſembly, with the Preſident at their head. On the

99 The aſſembly diſſolved.

30th of September, this National Aſſembly, which has ſince been known by the name of the *Conſtituent Aſſembly*, diſſolved itſelf, and gave place to the ſucceeding *Legiſlative National Aſſembly*, which had been elected according to the rules preſcribed by the new conſtitution.

100 Character and labours of the conſtituent aſſembly.

On the character and the labours of the *Conſtituent Aſſembly*, we ſhall only remark, that it contained many men of talents, and, in all probability, a conſiderable number of men of integrity. Towards the cloſe of its ſeſſion, it aſſumed a very ſtriking character of moderation, and appears to have been completely monarchical, although its jealouſy of the ancient ariſtocracy prevented it from ſufficiently guarding the throne againſt popular violence; for a very ſtriking defect in the new conſtitution ſoon appeared. The King poſſeſſed a *veto*, or negative, upon the reſolutions of the legiſlative body: but this negative he was bound to exerciſe in *perſon*, without reſponſibility, and without the intervention of his miniſters. He had no ſenate, or upper chamber, to ſtand between him and popular violence; and there was ſomething apparently abſurd in ſetting the vote of an individual, in oppoſition to the collective wiſdom and will of a whole nation. In conſequence of this, he was reduced to the hard alternative of yielding to every vote of the National Aſſembly, or of expoſing himſelf perſonally to public odium.

The new Aſſembly was opened by the King on the 7th of October, with much apparent union on all ſides. His ſpeech, recommending unanimity and confidence between the legiſlative and executive powers, was received with unbounded applauſe. The character of the men who compoſed the new National Aſſembly was unauſpicious to the Court. At the commencement of the revolution, the great body of the people at a diſtance from the capital were little intereſted in thoſe projects of freedom which occupied the more enlightened or more turbulent inhabitants of Paris. They had gradually, however, been rouſed from their lethargy. The variety of powers conferred by the new conſtitution upon the people at large, and the multiplicity of offices of which it gave them the patronage, had kindled in the minds of men a love of dominion, and a wiſh to interfere in public affairs. This attached them to the new order of things. The love of power, which is the leaſt diſguiſed paſſion in the human heart, and equally ſtrong in the breaſt of the meaneſt and of the higheſt of mankind, was thus, under the name of liberty, become a leading paſſion throughout this wide empire. They who flattered it moſt, and were moſt loud in praiſe of the rights of the people, became ſpeedily the favourites of the public. The conſequence of this was, that the new National Aſſembly was chiefly compoſed of country gentlemen, of principles highly democratic, or of men of letters who had publiſhed popular books, or conducted periodical publications. The members of the Conſtituent Aſſembly had been excluded by their own decree from holding ſeats in the new legiſlature.—The members of the latter, therefore, had little regard for a conſtitution which they themſelves had not framed, and which was not protected by the venerable ſanction of antiquity.

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101 The new aſſembly opened by the king, and the character of the members.

When this Aſſembly firſt met, it ſhewed a very trifling attention to formalities, and a peeviſh jealouſy of the miniſters of the crown. In the mean time, the treaty of Pilnitz, already mentioned, began to be rumoured abroad, and France was thrown into a ſtate of anxious jealouſy for the ſafety of its newly-acquired liberties. Although the Pruſſians and Germans (the Elector of Mentz alone excepted) all continued to temporize, the northern powers, Sweden and Ruſſia, entered into ſtrict engagements to reſtore the old deſpotiſm of France. On the 9th of November, a decree was paſſed, that the emigrants who, after the firſt of January next, ſhould be found aſſembled, as at preſent, in a hoſtile manner, beyond the frontiers, ſhould be conſidered as guilty of a conſpiracy, and ſuffer death; that the French Princes, and public functionaries, who ſhould not return before that period, ſhould be puniſhable in the ſame manner, and their property forfeited during their own lives. On the 18th, a ſeries of ſevere decrees was alſo paſſed againſt ſuch of the ejected clergy as ſtill refuſed to take the civic oath. To both theſe decrees the King oppoſed his *veto*, or negative.—The moderate party, who were attached to the conſtitution, rejoiced at this as a proof of the freedom of their ſovereign. But, on the other ſide, it excited a moſt violent clamour, and became the means of exciting new ſuſpicion of the wiſhes of the Court. At this time anſwers were received from the different foreign Courts to the notification ſent them of the King's acceptance of the new conſtitution. Theſe were generally conceived in a ſtile of caution, and avoided giving open

102 Their jealouſy of the miniſters of the crown, and conſequent conduct.

103 Pacific anſwers received from foreign powers.

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open offence. The Emperor even prohibited all aſſemblages of emigrants within his ſtates; and the King intimated to the aſſembly that he had declared to the Elector of Treves, that unleſs the emigrants ſhould ceaſe before the 15th of January to make hoſtile preparations within his territories, he would be conſidered as the enemy of France. All this, however, did not preſerve the court from ſuſpicion; for although the different foreign courts had openly declared pacific intentions, yet the French emigrants boldly aſſerted, that all Europe was actually arming in their favour. Accordingly they ceaſed not to ſolicit their equals in rank, who ſtill remained within the country, to leave it to join with them in what they called the *royal cauſe*.—The unhappy Louis, placed between a republican party that was gradually gathering ſtrength, and an ariſtocratical party that was rouſing Europe to arms againſt a nation of which he was the conſtitutional chief, and a combination of Princes juſtly ſuſpected of wiſhing to ſeize upon a part of his dominions, ſtood in a ſituation which would have perplexed the moſt ſkilful ſtatesman; and it is no proof of incapacity that he fell a ſacrifice to circumſtances which might have overwhelmed any known meaſure of human ingenuity. Addreſſes were crowding into the Aſſembly, diſapproving the conduct of the court. M. Montmorin reſigned; M. Deleſſart ſucceeded him; and M. Cahier de Gerville became miniſter of the interior. M. du Portail reſigned alſo, and M. Narbonne ſucceeded him as miniſter of war. In the month of November, M. Bailly's mayoralty terminated; and the once popular La Fayette appeared as a candidate to ſucceed him. But he was ſucceſsfully oppoſed by M. Petion, a violent Jacobin, and a declared republican, who was elected mayor of Paris by a great majority.

104 But the court ſtill ſuſpected.

105 The miniſtry changed.

106 The Parliament eſtabliſhed to oppoſe the Jacobin club.

At this period the moderate men, who were friends of the conſtitution, attempted to counteract the influence of the Jacobin club by the eſtabliſhment of a ſimilar one. It derived its name from the vacant convent of the *Feuillans*, in which it aſſembled. The moſt active members of the Conſtituent Aſſembly belonged to it, ſuch as M. M. D'Andre, Barnave, the Lameths, Du Port, Rabaud, Sieyes, Chapelier, Thouret, Labord, Taleyrand, Monteſquieu, Beaumetz, &c. The Jacobins contrived to excite a riot at the place of their meeting, which was in the vicinity of the hall of the National Aſſembly. This afforded a pretext for applying to the Aſſembly for the removal of the new club. The Aſſembly ſhowed their diſpoſition, by complying with this requeſt.

107 State of France in the end of 1791 and beginning of 1792.

At the end of this year, the kingdom of France was by no means proſperous. The public revenue had fallen far ſhort of the expenditure. The emigrant nobility had carried out of the kingdom the greater part of the current coin, and a variety of manufacturers, who depended upon their oſtentatious luxury, were reduced to much diſtreſs. The diſpoſitions of foreign courts appeared very doubtful. The new year, however, opened with deluſive proſpects of tranquillity.—The German Princes appeared ſatisfied with the mode of compenſation which the French had offered for the loſs of their poſſeſſions in Alſace and Lorraine. The Prince of Loweſtein accepted of an indemnification.—The Princes of Hohenlohe and Salm-Salm declared themſelves ready to treat upon the ſame terms. Prince Maximilian, and the Dukes of Wirtemberg and Deux-Ponts, freely negociated. It is unneceſſary to ſtate in detail the ſubterfuges employed, in the mean time, by the crafty Leopold, for amuſing the French with the appearances of peace. M. Deleſſart, miniſter for foreign affairs, fell a ſacrifice to them, and probably to the undecided character of Louis. He was accuſed by M. Briſſot of not having given timely notice to the National Aſſembly of the diſpoſitions of foreign powers, and of not preſſing proper meaſures for ſecuring the honour and ſafety of the nation. A decree of accuſation paſſed againſt him in his abſence. He was apprehended, tried by the high national court at Orleans, and executed in conſequence of its ſentence.

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108 The death of the emperor and murder of the king of Sweden.

The ſudden death of Leopold on the firſt of March gave riſe to a tranſient hope that peace might ſtill be preſerved. A ſuſpicion of poiſon fell upon the French, but it was removed by the detail of his diſeaſe that was ſpeedily publiſhed. On the 16th of the ſame month, the King of Sweden was wounded by a nobleman of the name of Ankerſtrom, and died on the 29th. This enterpriſing prince had overturned the conſtitution of his own country, and he had formed the project of conducting in perſon his troops to the frontiers of France, and of commanding or accompanying the combined armies of Europe in their attempt to avenge the cauſe of inſulted royalty. In was in a great meaſure to counteract this ſcheme that he was aſſaſſinated.

109 The emperor's ſucceſſor openly avows warlike intentions.

The ſudden fall, however, of theſe two enemies rather accelerated than retarded the meditated hoſtilities. The young king of Hungary, who ſucceeded to the empire, made no ſecret either of his own intentions or of the exiſtence of a *concert of Princes* againſt France. M. Dumourier was now at the head of the war-office, M. Rolland was miniſter of the interior, and M. Claviere miniſter of finance. The Jacobins were all-powerful. The Court gave way to the torrent. The property of the emigrants was confiſcated, reſerving the rights of creditors. The Imperial miniſter, Prince Kaunitz demanded three things of France; *1ſt*, The reſtitution of their feudal rights to the German Princes; *2dly*, To reſtore Avignon to the Pope, the inhabitants of which had ſome time before thrown off their allegiance, and prevailed with the Conſtituent Aſſembly to receive their country as a part of France; and *laſtly*, Prince Kaunitz demanded, that "the neighbouring powers ſhould have no reaſon for apprehenſion from the preſent weakneſs of the internal government of France." On receiving theſe demands, the king propoſed a declaration of war, which was decreed by the National Aſſembly on the 20th of April, againſt *the King of Hungary and Bohemia*.

110 And the Auſtrian Netherlands are unſucceſsfully attacked by the French.

The French immediately began the war, by attacking in three different columns the Auſtrian Netherlands. M. Theobald Dillon advanced from Liſle to Tournay, where he found a ſtrong body of Auſtrians ready to receive him. The national troops, unaccuſtomed to ſuſtain the fire of regular ſoldiers, were inſtantly thrown into confuſion, and fled even to the gates of Liſle. The cry of *treaſon* reſounded on all ſides; and their commander, an experienced and faithful officer, was murdered by his own ſoldiers and the mob. A ſecond diviſion of 15,000 men, under Lieutenant-General Biron, took poſſeſſion of Quievrain on the 29th, and marched towards Mons. General Biron was here attacked by the

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the Auſtrians, whom he repulſed. Hearing, however, of the defeat of Dillon, he retreated. A third party advanced to Furnes, but afterwards withdrew. La Fayette at the ſame time advanced towards Bouvines, half way to Namur, from which he afterwards retreated. The whole of theſe expeditions were ill contrived, in as much as they divided the French undiſciplined troops, and expoſed them in ſmall bodies to the attack of veteran forces. The Auſtrians were ſome time before they attempted to retaliate. At length, however, on the 11th of June, they attacked M. Gouvion, who commanded the advanced guard of La Fayette's army near Maubeuge. M. Gouvion was killed by a rolling bullet; but La Fayette himſelf having come up, the Auſtrians abandoned the field. In the mean time, matters were haſtening in Paris towards a violent criſis.

111 Two parties in Paris at this period, and the conſequences.

Two parties, both of which were hoſtile to the preſent conſtitution, had gradually been formed in the ſtate. The one wiſhed to give more effectual ſupport to the royal authority, by eſtabliſhing a *ſenate* or *two chambers*, to prevent the king's vote from being the ſole check upon popular enthuſiaſm. The other party wiſhed to ſet aſide royalty altogether, and to hazard the bold experiment of converting France into a republic. Theſe laſt were ſupported by the Jacobin club, which had now contrived to concentrate in itſelf an immenſe maſs of influence. Innumerable popular ſocieties were eſtabliſhed in every town and village throughout the provinces. With theſe a regular correſpondence was kept up by writing and by emiſſaries. Thus ſchemes and notions were inſtantaneouſly propagated through a great empire, and all the violent ſpirits which it contained were enabled to act in concert: But the more immediate engine of the republican party conſiſted of the immenſe population of the metropolis, whom they now endeavoured to keep in conſtant alarm. For this purpoſe they alleged, that an *Auſtrian Committee*, that is to ſay, a conſpiracy in favour of the enemies of the country, exiſted among the friends of the court. M. M. Genſonné and Briſſot even offered in the aſſembly to prove the exiſtence of this pretended Auſtrian committee. A report was next circulated, that the king intended to abſcond from the capital on the 23d of May. His majeſty publicly contradicted theſe accuſations as calumnies, but they made no ſmall impreſſion upon the minds of the public. New decrees were now made againſt the refractory clergy, but theſe his majeſty refuſed to ſanction. A propoſal was alſo made and decreed in the aſſembly to form a camp of 20,000 men under the walls of Paris, and that for this levy every canton in the kingdom ſhould contribute one horſeman and four infantry. The national guard of Paris diſliked the propoſal, and the king gave to it his negative. Indeed at this time the king ſeems to have come to a reſolution of ſtanding out againſt the Jacobin party, to which he had for ſome time yielded. The miniſtry were therefore diſmiſſed, excepting M. Dumourier, and others were appointed in their ſtead. By this event Dumourier loſt the confidence of the Jacobin club. He ſaw his error, reſigned his office, and joined the army. In the mean time a decree had been paſſed, authoriſing the manufacture of pikes for the purpoſe of arming cheaply the lower claſs of citizens. All means were uſed to render the king odious by inflammatory writings and harangues; and in both theſe the noted incendiary Marat took the lead.

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On the 20th of June M. Roederer, the Procureur General Syndic informed the national aſſembly, that, contrary to law, formidable bodies of armed men were preparing to preſent petitions to the king, and to the national aſſembly. A part of them ſpeedily appeared with St Huruge and Santerre a brewer at their head. They marched through the hall in a proceſſion that laſted two hours, at four o'clock in the afternoon, to the number of about 40,000. They ſurrounded the Thuilleries. The gates were thrown open; and on an attempt to break the door of the apartment, where the king then was, he ordered them to be admitted. His ſiſter the princeſs Elizabeth never departed from his ſide during four or five hours that he was ſurrounded by the multitude, and compelled to liſten to every indignity. All this while Petion, the mayor of Paris, was unaccountably abſent. He at length, however, arrived, and alſo a deputation from the aſſembly. The queen, with her children and the princeſs de Lamballe, were in the mean time in the council-chamber, where, though protected from violence, they were yet expoſed to much inſult. At laſt, in conſequence of the approach of evening, and of the entreaties of Petion, the multitude gradually diſperſed.

112 An armed mob march through the aſſembly, ſurround the Thuilleries and inſult the royal family.

113 The more reſpectable inhabitants are aſhamed of ſuch conduct.

The indignities ſuffered on this day by the royal family were in ſome reſpects not unfavourable to their cauſe. A great number of the moſt reſpectable inhabitants of the capital were aſhamed of ſuch proceedings. They complained of them ſeverely in a petition to the aſſembly, and addreſſes to the ſame purpoſe were received from ſeveral departments. The directory of the department of Paris, at the head of which were M. Rochefoucault and M. Talleyrand, publiſhed a declaration diſapproving of the conduct of the mayor, and of M. Manuel the procureur of the commune, whom they afterwards ſuſpended from their offices, although they were ſpeedily reſtored by a decree of the aſſembly. At the ſame time, La Fayette leaving his army ſuddenly, appeared on the 26th at the bar of the national aſſembly. He declared that he came to expreſs the indignation which the whole army felt on account of the events of the 20th: he called upon the aſſembly to puniſh the promoters of theſe events, and to diſſolve the factious clubs. The ſudden appearance of La Fayette threw the Jacobins into conſternation, and from that period they never ceaſed to calumniate him.

114 The king of Pruſſia marches againſt France.

On the 1ſt of July, on the motion of M. Jean de Brie, the aſſembly ordered a proclamation to be made, that *the country was in danger*. On the 6th, the king gave intimation that the king of Pruſſia was marching with 52,000 men to co-operate againſt France. The French arms were at this time ſomewhat ſucceſsful in the Auſtrian Netherlands; but the cabinet ſpeedily thought it neceſſary to order the armies to retreat: a meaſure which was afterwards publicly cenſured by Marſhal Luckner.

115 Moderate ſpeech of the biſhop of Lyons.

On the 7th, a ſingular ſcene occurred in the national aſſembly. At the inſtant that M. Briſſot was about to commence an oration, M. Lammourette biſhop of Lyons requeſted to be heard for a few minutes. He expatiated on the neceſſity of union among the members of the aſſembly, and of ſacrificing their paſſions and prejudices

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judices on the altar of their country. He concluded an animated address with these words, "Let all who hold in equal detestation a republic and two chambers, and who wish to maintain the constitution as it is, rise!" The words were scarcely pronounced when the whole assembly started from their seats. Men of all parties [illegible] and protested their adherence to [illegible]. A deputation announced this [illegible] to the king; who immediately came and [illegible] them in a short speech, which was received with [illegible]. The only good effect, however, produced by this temporary agreement was, that the [illegible] of July, which was celebrated with the usual magnificence, passed over in tranquillity.

116 Manifesto of the duke of Brunswick.

On the 25th of July, the duke of Brunswick issued at Coblentz his celebrated manifesto. It declared the purpose of the intended invasion of France to be the restoration of the French king to full authority. It declared the national guard of France responsible for the preservation of tranquillity; and threatened with the punishment of death, as rebels to their king, those who should appear in arms against the allied powers. All men holding offices, civil or military, were threatened in the same manner, as well as the inhabitants of all cities. The city of Paris in particular, and the national assembly, were declared responsible for every insult which might be offered to the royal family. It was declared, that if they were not immediately placed in safety, the allies were resolved to inflict "on those who should deserve it the most exemplary and ever memorable avenging punishments, by giving up the city of Paris to military execution, and exposing it to total destruction; and the rebels who should be guilty of illegal resistance should suffer the punishments which they should have deserved." This sanguinary and imprudent manifesto operated as a warrant for the destruction of the unfortunate Louis XVI. It left no middle party in the nation. All who wished to preserve freedom in any form, and all who loved the independence of their country, were instantly united. At the same time, the reproaches cast on the king by the Jacobins now gained universal credit. The kings of Prussia and of Hungary told the French nation, that their monarch was secretly hostile to the constitution; and the restoration of him and his family to despotic power was made the sole pretence for a bloody and dangerous war.

117 Intrigues to Louis.

118 Republican party, who resolve to depose him.

The republican party saw the advantage which they had now gained, and resolved upon the deposition of the king. The chief engine which they meant to employ in the service consisted of about 15[illegible] men, who had come to Paris at the period of the confederation on the 14th of July, and therefore called *Fœderés*, and who were also sometimes denominated *Marseillois*, from the place from which the greater number of them came. Next to these, dependence was placed in the populace of the suburbs of the capital. The designs of the republicans were not unknown to the court, and both parties were forming plans of operation. It is said that the royal party intended that the king and his family should suddenly leave the capital, and proceed to [illegible]. The republicans [illegible] the person of the king, and to confine him in the castle of Vincennes till a national convention should decide upon his fate. Both allegations are probably true. Every motive which can influence the mind of man must have induced Louis to wish to be at a distance from the factious and sanguinary capital. And the subsequent conduct of the republicans authorise us to believe them capable of the worst crime that was laid to their charge.

119 La Fayette accused and acquitted.

Various charges had been brought forward in the assembly against La Fayette, and the 8th of August was appointed for their discussion. In the mean time, on the 3d of August, Petion the mayor, at the head of a deputation from the sections of Paris, appeared at the bar, and in a solemn speech demanded the deposition of the king. The discussion of the accusation against La Fayette was considered as a trial of strength between the parties: he was acquitted, however, by a majority of nearly 200; and the republican party, despairing of carrying their point by a vote of the national assembly, resolved to have recourse to insurrection and force.

120 Horrid plot of the republicans.

On the evening of the 9th of August, about 1500 gentlemen, officers of the army, and others, repaired to the palace, resolved to protect the royal family or to die in their defence: added to these were 700 Swiss guards, with a body of cavalry amounting to about 1000. Mandat, the commander of the national guards, a man who was firmly attached to the constitution, had procured 2400 of that body and 12 pieces of cannon. With such a force, it has been generally thought that, by vigorous and steady councils, the palace, which is a kind of castle, might have been successfully defended; and what is now called a revolution might have born the name of a rebellion. Meanwhile the assembly declared its sittings permanent. Petion was at the palace late on the evening of the 9th. Some apprehensions were entertained, or pretended to be entertained, for his safety (for the whole of this business was, on the part of the republicans, a deep laid scheme), and a deputation from the assembly brought him away. At midnight the toçsin or alarm bell was sounded, and the drums beat to arms through the city. At this instant a number of the most active leaders of the republican party assembled, and elected a new common council or *commune*. The persons thus irregularly chosen instantly took possession of the common hall, and drove out the lawful members; who, with that weakness with which men are apt to shrink from stations of responsibility in perilous times, readily gave place to the usurpers. The new commune sent repeated messages to M. Mandat, requiring his attendance upon important business. He was occupied in arranging the troops in the best order around the palace; but suspecting nothing, he went to the common hall, and was there astonished to find a different assembly from what he expected. He was abruptly accused of a plot to massacre the people, and ordered to prison; but as he descended the stairs, he was shot with a pistol, and Santerre was appointed in his stead to command the national guard.

On this eventful night no person in the palace went to bed. About six o'clock in the morning of the 10th the king descended into the gardens to review the troops. He was received with shouts of *Vive la roi*, excepting from the artillery, who shouted *Vive la nation*. The king returned to the palace, and the multitude continued to collect. The national guard seemed undetermined about what they were to do, as they assembled in divisions near the palace; and had a steady resistance

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sistance been made from within, it is probable they would have joined the royal party. But towards eight o'clock M. Roederer procured admittance to the palace, and told the king that armed multitudes were assembling in hostile array around the Thuilleries; that the national guard was not to be depended upon; and that, in case of resistance, the whole royal family would most certainly be massacred. He therefore advised the king to seek protection in the hall of the national assembly. With this advice the king, with his usual facility of temper, was ready to comply; but the queen opposed with vehemence the humiliating proposal. Becoming gradually, however, alarmed for the safety of her children, she gave her consent; and the king and queen, the princess Elizabeth, with the prince and princess royal, went on foot to the hall of the assembly. "I am come hither (said his majesty) to prevent a great crime. Among you, gentlemen, I believe myself in safety." By an article of the constitution the assembly could not deliberate in presence of the king. The royal family, were, therefore, placed in a narrow box separated from the hall by a railing, where they remained for 14 hours without any place to which they could retire for refreshment, excepting a very small closet adjoining. Here they sat listening to debates, in which the royal character and office were treated with every mark of insult.

121 The royal family fly for safety to the hall of the national assembly.

When the king left the palace of the Thuilleries, he unfortunately forgot to order it to be immediately surrendered. He recollected this as soon as he reached the assembly, and sent orders for this purpose; but it was now too late. The insurgents amounted to about 20,000 effective men. They were drawn up in tolerable order by Westerman a Prussian, and had about 30 pieces of cannon along with them. The gentlemen within the palace, who had assembled to protect the king's person, were now dispirited, and knew not what part to act. The commander of the Swiss, M. Affry, was absent, and the captains knew not what to do; and the national guard had no leader in consequence of the death of Mandat. About nine o'clock the outer gates were forced open; and the insurgents formed their line in front of the palace. A bloody combat commenced chiefly between the Marseillois and the Swiss. After a brave resistance of about an hour, the Swiss were overpowered by numbers, and gave way. All of them that could be found in the palace were massacred; some even while imploring quarter on their knees. Others escaped into the city, and were protected by individuals. Of this brave regiment, however, only 200 survived; but every human being, even the lowest servants found in the palace, were put to death. The Swiss taken prisoners in various quarters were conducted to the door of the assembly, and taken by decree under the protection of the state. But the sanguinary multitude insisted upon putting them to instant death; and the assembly would, in all probability, have been unable to protect them, had not the Marseillois interfered in their favour.

122 A bloody conflict in the palace in which most of the Swiss-guards are massacred.

123 The royal [illegible]

The suspension of the royal authority was now decreed, and the nation was invited to elect a *Convention* to determine the nature of its future government. On this uncommon occasion all Frenchmen of 21 years of [illegible] were declared capable of electing, and of being elected, deputies to the new national Convention. Commissioners were, in the mean time, sent on the same evening to give to the armies a false and favourable account of these transactions. The royal family were sent to the old palace of the Temple in the midst of the city, to remain there under a strict guard; and all persons of rank who had been attached to them were seized and committed to the different prisons.

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124 Bloody temper of the people of Paris, &c.

To give an idea of the temper of the people of Paris at this time, it is proper to remark, that at the same instant when the multitude with bloody fury were massacring the menial servants in the palace, and could scarcely be restrained from offering violence to the Swiss who were made prisoners, they would suffer no act of pillage to pass unpunished. Several attempts of this kind were accordingly followed by the instant death of the criminals. The plate, the jewels, and money found in the Thuilleries were brought to the national assembly, and thrown down in the hall. One man, whose dress and appearance bespoke extreme poverty, cast upon the table an hat full of gold.—But the minds of these men were elevated by enthusiasm; and they conceived themselves as at this moment the champions of freedom, and objects of terror to the kings of the earth.

125 Critical situation of the whole kingdom.

In the mean time, the situation of France was extremely critical, and it appeared very doubtful if the new Convention would ever be suffered to assemble. La Fayette had accidentally got speedy notice of the events of the 10th of August. He advised the magistrates of the town of Sedan to imprison the commissioners from the national assembly when they should arrive there; which was accordingly done. He, at the same time, published an address to his army, calling upon them to support the king and the constitution; but finding that they were not to be depended upon, on the 19th August he left his camp in the night, accompanied only by his staff and a few servants. They took the rout of Rochefort in Liege, which was a neutral country; but were met by a party of the enemy, who took them prisoners, and they were detained in Prussian and Austrian dungeons till autumn 1794, when it was said that La Fayette himself made his escape; the report, however, was premature. The severe treatment of this man was probably a considerable error in policy on the part of the allies. His fidelity to the king is very generally admitted; and his attachment to the constitution, his love of his country, his bravery, and many amiable qualities merited a better fate.

126 La Fayette withdraws from the army—His fate and character.

To return from this digression. The commissioners were soon set at liberty at Sedan, and received with applause by the army of La Fayette. General Arthur Dillon at first entered into the sentiments of La Fayette; but the politic Dumourier diverted him from his purpose, and by this means regained his credit with the Jacobins, and was appointed commander in chief. The other generals, Biron, Montesquieu, Kellerman, and Custine, made no opposition to the will of the national assembly.

Meanwhile, the combined armies of Austria and Prussia had entered France. The duke of Brunswick's army was above 50,000 strong. General Clairfait had joined him with 15,000 Austrians, and a considerable body

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body of Heſſians, along with 20,000 French emigrants; amounting in all to 90,000 men. To oppose these, Dumouriez had only 17,000 men collected from the point from which the enemy were approaching in Luxembourg. The French emigrants had joined the duke of Brunſwick ſuch an account of the exaggerated ſtate of their own country, and of the pretended diſaffection of all orders of men towards the ruling faction in Paris, that no reſiſtance of any importance was expected. Whilſt the combined troops, conſiſting either of ſteady Auſtrian or Hungarian battalions, or of thoſe well diſciplined Pruſſians which the great Frederick had inured to the beſt military diſcipline, were reviewed in Germany before ſetting out on their march, it is ſaid that the ſpectators, among whom the French cauſe was not unpopular, beheld them with anxiety and regret, and pitied the unhappy country againſt which this irreſiſtible force was directed. The ſoldiers and their officers regarded themſelves as departing for a hunting match, or an excurſion of pleaſure; and many of the uſual accommodations of an army were ill attended to, ſuch as hoſpitals, &c. The beginning of their progreſs into France juſtified theſe expectations. Longwy was rendered after a ſiege of 15 hours, although well fortified, poſſeſſed of a garriſon of 3500 men, and defended by 71 pieces of cannon. The news of this event irritated the aſſembly ſo much, that they decreed, that, when retaken, the houſes of the citizens ſhould be razed to the ground; and, diſtruſtful of the officers of the army, they decreed that the municipal officers of a town ſhould hereafter have power to controul the deliberations of the council of war. Verdun was next ſummoned; and here the municipality compelled the governor M. Beaurepiare to ſurrender. That officer, diſappointed and enraged, ſhot himſelf dead with a piſtol in preſence of the council, and on the 2d of September the Pruſſian troops entered the town.

The news of this ſecond capture, and of the approach of the Pruſſians, ſpread an inſtant alarm through Paris. It was propoſed to raiſe a volunteer army, which ſhould ſet out immediately to meet the enemy. The common council, which was now led by Robeſpierre, Danton, Marat, and others of the moſt ſanguinary character, ordered the alarm-guns to be fired, and the populace to be ſummoned to meet in the Champ de Mars to enroll themſelves to march againſt the enemy. The people aſſembled, and either in conſequence of a premeditated plan, or, which is not very probable, of an inſidious movement, a number of voices exclaimed, that "the domeſtic foes of the nation ought to be deſtroyed before its foreign enemies were attacked."

Parties of armed men proceeded without delay to the priſons where the non-juring clergy, the Swiſs officers, and thoſe confined ſince the 10th of Auguſt on account of practices againſt the ſtate, were detained in cuſtody. They took out the priſoners one by one, gave them a kind of mock trial before a jury of themſelves, acquitted ſome few, and murdered the reſt. Among the latter was the princeſs de Lamballe. She was taken from her bed, cruelly tortured, and maſſacred; her head was carried by the populace to the Temple, to the family of the unfortunate Louis. Their murderers had been two days, and upwards of 200 perſons were put to death. There is ſcarce any thing in hiſtory that can be repreſented as parallel to theſe; they were committed, it is ſaid, by leſs than 300 men, in the midſt of an immenſe city, which heard of them with horror, and in the vicinity of the national aſſembly, which, by going in a body, could have put an end to them. But ſuch was the confuſion and diſplay of theſe two diſgraceful days, that no man dared to ſtir from his own houſe; and every one believed that the whole city, excepting his own ſtreet, was engaged in maſſacre and bloodſhed. The national guards were all ready at their reſpective poſts, but no man directed them to act: and there is too much reaſon to ſuſpect that Santerre and the chiefs of the commune connived, at leaſt, at the tranſaction.

130 State of the French army, and conduct of Dumourier.

In the mean time, general Dumourier was taking the beſt meaſures to protract the march of the enemy till the army of Kellerman, conſiſting of 20,000 men, could join him from Lorraine, and that of Bournonville from Flanders, amounting to 13,000; together with whatever new levies Luckner might be able to ſend him from Chalons. The foreſt of Argonne extends from north to ſouth upwards of 40 miles; it lay directly in the route of the duke of Brunſwick, who muſt either force his way acroſs it, or make a circuit of 40 miles by the paſs of Grandpré on the north, or by Barleduc on the ſouth. The paſs that lay directly in his route was that of Bieſme. After ſurveying Dillon's poſition here, he left a party of 20,000 men to watch it; and with the main body of his army took the circuitous route by Grandpré on the north. Here Dumourier waited to receive him, and was attacked on the 12th and 13th without ſucceſs: but on the 14th, the attack of the Pruſſians was irreſiſtible, and Dumourier retreating, gave up the paſs. On his march he was ſo violently preſſed by the advanced cavalry of the Pruſſians, that his army, at one time, was ſeized with a panic, and fled before 1500 men; who, if they had puſhed their advantage, might have diſperſed it. On the 15th, however, Dumourier encamped at St Menehould, and began to fortify it. Bournonville's army joined Dumourier on the 17th. The duke of Brunſwick formed a plan of attacking Kellerman before his junction could be completed. That general arrived on the 19th within a mile of Dumourier's camp; the projected attack took place; the Pruſſians manœuvred with their uſual coolneſs and addreſs; they attempted to ſurround Kellerman's army, but this could not be accompliſhed. The French troops preſerved excellent order, while the national vivacity was conſtantly ſhowing itſelf in their ſhouts and patriotic ſongs: 400 French were killed, and 500 wounded; the loſs of the Pruſſians was much greater: and, in the face of the enemy, Kellerman joined Dumourier at the end of the engagement without oppoſition. At the time that the attack was made on the army of Kellerman, an attempt was made to force Dillon's camp at Bieſme by the 20,000 men that had been left in its vicinity, but without ſucceſs; and this large detachment was thus prevented from croſſing the foreſt of Argonne and joining the duke of Brunſwick. It is to be obſerved, that in theſe engagements the French owed their ſuperiority chiefly to the excellence of their artillery; a circumſtance which ſerved to convince their enemies that they had

131 The Pruſſians oblige him to retreat, but do not follow up their advantage.

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had to contend with regular military bodies, and not with undiſciplined multitudes, as they expected.

132 The Pruſſians diſtreſſed by ſickneſs and famine.

The duke of Brunſwick encamped his army at La Lun, near the camp of Dumourier. And here the Pruſſians began to be in extreme diſtreſs both from ſickneſs and famine. No temptation could induce the inhabitants of the country to carry proviſions to the hoſtile camp, while at the ſame time the French army was abundantly ſupplied.

Bournonville, with a body of 4000 men, intercepted ſeveral droves of cattle and other convoys of proviſions deſtined for the Pruſſians. The rain fell in torrents, and the roads were uncommonly deep. Expoſed to the cold, the moiſture, and want of proviſions, the Pruſſians raſhly ate great quantities of the grapes of Champagne. The conſequence of this was, that an epidemical diſtemper commenced and ſpread through the army to ſuch an extent, that 10,000 men at one time were unfit for duty. The duke of Brunſwick, however, ſtill commanded a force much more numerous than that of Dumourier; and he has been much cenſured for not attacking his camp, and forcing him to engage. It has been ſaid, that the veteran and numerous force which he commanded would have marched to certain victory againſt the raw troops that oppoſed them; that, having defeated Dumourier's army, there was nothing to oppoſe their march to Paris. But the duke of Brunſwick had entered France upon the ſuppoſition, that in its preſent diſtracted ſtate no regular army could be brought into the field againſt him, and that the people at large were hoſtile to the ruling faction. The contrary of all this had turned out to be true. He found himſelf in the midſt of an hoſtile people, and oppoſed by ſkilful military chiefs. A defeat in ſuch a ſituation would have brought certain ruin to his army; and even the loſs ſuſtained in the acquiſition of a victory might have proved equally fatal. The remains of the French army would not fail to hang upon his rear; and from the diſpoſition of the people it appeared impoſſible to aſcertain to what amount that army might be ſuddenly increaſed. After propoſing a truce, therefore, which laſted eight days, he commenced his retreat towards Grandpré, and no advantage was gained over him in the courſe of it. Verdun was retaken by the French on the 12th of October, and Longwy on the 18th; the ſiege of Thionville was at the ſame time raiſed. That ſmall, but ſtrong fortreſs, under the command of general Felix Wimpfen, had held in check an army of 15,000.

133 Liſle ſummoned and vigorouſly beſieged by the Auſtrians, but in vain.

While the Pruſſians were advancing from the north-eaſt, the Auſtrians under the duke of Saxe Teſchen laid ſiege to Liſle. The council-general of the commune anſwered the ſummons of the beſiegers thus, "We have juſt renewed our oath to be faithful to the nation, and to maintain liberty and equality, or to die at our poſt. We will not perjure ourſelves." Such was the anſwer of theſe men who had already perjured themſelves by contributing to overturn the conſtitution which they had repeatedly ſworn to defend. The Auſtrian batteries began to play upon the town on the 29th, and were chiefly directed againſt that quarter which was inhabited by the lower claſs of citizens, for the purpoſe of making them mutinous and ſeditious. This procedure was ill judged. The lower claſſes of mankind are always much accuſtomed to hardſhips, and they go fartheſt in ſupport of any enthuſiaſtic principle they have been perſuaded to adopt. Accordingly, though a great part of the city was reduced to a heap of ruins, the citizens of Liſle became daily more obſtinate. They received each other into the houſes that were ſtill ſtanding, and every vault and cellar was occupied. Although upwards of 30,000 red-hot balls and 6000 bombs were thrown into the city, beſides the efforts made by an immenſe battering train of artillery, yet the loſs both to the garriſon and people did not exceed 500 perſons, moſt of whom were women and children. After a fortnight of fruitleſs labour the Auſtrians raiſed the ſiege.

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134 War declared againſt the king of Sardinia, Savoy taken, &c.

War had been declared againſt the king of Sardinia on account of the threatening appearances exhibited in that quarter. On the 20th of September general Monteſquieu entered the territories of Savoy, and was received at Chambery and throughout the whole country with marks of unbounded welcome. On the 29th general Anſelm, with another body of troops, took poſſeſſion of Nice and the country around it. On the 30th general Cuſtine advanced to Spires, when he found the Auſtrians drawn up in order of battle. He attacked and drove them through the city, taking 3000 of them priſoners. The capture of Worms ſucceeded that of Spires; Mentz ſurrendered by capitulation; and Frankfort fell into the hands of the French on the 23d. Out of this laſt place, however, they were afterwards driven on the 2d of December.

135 The national convention aſſembles,

On the 20th of September the French *National Convention* aſſembled. It was found to contain men of all characters, orders, and ranks. Many diſtinguiſhed members of the *Conſtituting* Aſſembly were elected into it, and alſo ſeveral that had belonged to the *Legiſlative* Aſſembly; even foreigners were invited to become French legiſlators. The famous Thomas Paine and Dr Prieſtley of England were elected by certain departments; but the latter declined accepting. Clouts a Pruſſian, whom we formerly noticed as bringing a deputation to the bar of the conſtituent aſſembly, conſiſting of perſons repreſenting all the nations of the earth, was alſo choſen. The general aſpect of the new convention ſhowed that the republican party had acquired a decided ſuperiority. On the firſt day of meeting M. Collot D'Herbois, who had formerly been an actor, aſcended the tribune, and propoſed *the eternal abolition of royalty in France.* The queſtion was carried by acclamation, and the houſe adjourned. Meſſages were ſent to all parts of the country to intimate the decree, and by the influence of the Jacobins they were everywhere received with applauſe. It was next day decreed, that all public acts ſhould be dated by the year of the French republic; and all citizens were declared eligible to all the vacant offices and places. The rage of republicaniſm ſoon went ſo far, that the ordinary titles of Monſieur and Madame were aboliſhed, and the appellation of *Citizen* ſubſtituted in their ſtead, as more ſuitable to the principles of liberty and equality.—It may be remarked, that in this laſt trifling circumſtance an attachment to the form of ſpeech to which they had been accuſtomed appears even in its abolition: For, although the Roman orators addreſſed their countrymen when aſſembled by the honourable appellation of *Citizens*, yet they never, in accoſting an individual, called him Citizen Cato, or Citizen Cæſar, according to the mode now adopted in France.

136 And decrees the eternal abolition of royalty in France.

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It was ſoon diſcovered that the leading members had divided into two parties or factions. The one of these was called *Girondiſts*, because Vergniaud, Guadet, Genſonné, Buzot, and ſome others of its leaders, were members from the department of La Gironde. The celebrity of these orators attached to this party; and they were ſometimes denominated *Briſſotines*, from M. Briſſot de Warville their principal leader. They ſupported the meaſures of the miniſtry, at the head of which was Roland; and the account of the convention was obviouſly attached to them. In oppoſition to theſe was the ſmaller party of the *Mountain*; ſo called from its members uſually ſitting in the convention on the upper ſeats of the hall. They were men poſſeſſed of leſs perſonal reſpectability, and fewer literary accompliſhments, but of daring and ſanguinary characters, whom the revolution had brought into public notice. At the head of this party were Danton and Robeſpierre; and ſubordinate to theſe were Couthon, Bazire, Thuriot, Merlin de Thionville, St André, Camille Demoulins, Chabot, Collot D'Herbois, Sergent, Legendre, Fabre D'Eglantine, Panis, and Marat.

These two parties ſhowed the diverſity of their characters in the manner in which they treated the maſſacres of the 2d and 3d of September. The Briſſotines, with the majority of the convention wiſhed to bring the murderers to trial; but the queſtion was always eluded by the other party, with the aſſiſtance of the Jacobin club and of the populace.

118 Decree against the emigrants, &c.

On the 9th of October it was decreed, that all emigrants, when taken, ſhould ſuffer death; and on the 15th of November, in conſequence of an inſurrection in the duchy of Deux Ponts, and an application on the part of the inſurgents to the convention for aid, the following decree was paſſed: "The national convention declare, in the name of the French nation, that they will grant fraternity and aſſiſtance to all thoſe people who wiſh to procure liberty; and they charge the executive power to ſend orders to the generals to give aſſiſtance to ſuch people as have ſuffered, or are now ſuffering, in the cauſe of liberty." Of this decree foreign nations, with great reaſon, complained much, as will ſhortly appear.

119 Battle of Jemappe, and ſubmiſſion of the Auſtrian Netherlands.

To return to the military affairs of the new republic. On the 12th of October General Dumourier came to Paris, and was ſpeedily ſent to commence a winter campaign in the Netherlands. He ſuddenly attacked the Auſtrians at the village of Boſſu, and drove them from their ground. On the 5th of November he came in ſight of the enemy upon the heights of *Jemappe*. Three rows of fortifications aroſe above each other defended by 100 pieces of cannon. Their right was covered by the village and a river, and their left by thick woods. The French were by their own account 30,000, whilſt others with great probability of truth compute them at double that number, and the number of the Auſtrians was at leaſt 20,000. At ſeven in the morning of the following day a heavy cannonade commenced on both ſides, and at noon a cloſe attack was determined on by the French, whoſe right wing was commanded by Generals Bournonville and Dampierre, and the centre by General Egalité (ſon to the duke of Orleans who had aſſumed that name), Stetenboffe, Deſporets, and Drouet. The muſic played the popular march of the Marſeillois, and the ſoldiers ruſhed on with enthuſiaſm, ſhouting "Vive la nation." The engagement was warm and bloody; the French were repulſed, but their impetuoſity was at laſt irreſiſtible, and about two o'clock the enemy fled from their intrenchments. The loſs on both ſides was very great, that of the Auſtrians amounting to 4000. This victory was deciſive of the fate of the Netherlands. Mons and Bruſſels ſurrendered to Dumourier; Tournay, Malines, Ghent, and Antwerp, were taken poſſeſſion of by General Labourdonnaye; Louvain and Namur were taken by General Valence; and the whole Auſtrian Netherlands, Luxembourg only excepted, fell into the hands of the French: Liege was taken on the 28th of November after a ſucceſsful engagement, in which the Auſtrians loſt 5 or 6000 men and an immenſe train of artillery.

120 Violent conteſts between the Girondiſts and the Mountain.

France was now in a ſituation not unuſual in the hiſtory of thoſe nations that either are free, or are attempting to become ſo; ſucceſsful in all quarters abroad, but diſtraſted by factions at home. The two parties in the convention were engaged in a ſtruggle, which daily became more implacable. The party called the *Mountain* did not heſitate about the nature of the means they were to employ to bring about the ruin of their antagoniſts. They are even ſuſpected of having, through the medium of Pache the war-miniſter, retarded the ſupply of the armies, to render the ruling party odious by want of ſucceſs. They were for ſome time, however, unfortunate in this reſpect; and the daily news of victories ſupported with the public the credit of the Girondiſts. A new ſubject was therefore fallen upon, which was the queſtion, how the dethroned king was to be diſpoſed of? The moderate party wiſhed to ſave him; and this was a ſufficient reaſon for their antagoniſts to reſolve upon his ruin. A committee was appointed to give in a report upon his conduct. A variety of accuſations were brought againſt him; and the convention infamouſly reſolved to act the part of accuſers and of judges.

121 The king brought to trial.

It was on the 11th of December when the ill-fated monarch was ordered to the bar of the convention: the act of accuſation was read, and the king was ſummoned by the preſident, Barrere, to anſwer to each ſeparate charge.

Pref. "Louis, the French nation accuſes you of having committed a multitude of crimes to eſtabliſh your tyranny, in deſtroying her freedom. You, on the 20th of June 1789, attempted the ſovereignty of the people, by ſuſpending the aſſemblies of their repreſentatives, and expelling them with violence from the places of their ſittings. This is proved in the proceſs verbal entered at the Tennis-court of Verſailles by the members of the conſtituent aſſembly. On the 23d of June you wanted to dictate laws to the nation; you ſurrounded their repreſentatives with troops; you preſented to them two royal declarations, ſubverſive of all liberty, and ordered them to ſeparate. Your own declarations, and the minutes of the aſſembly, prove theſe attempts. What have you to anſwer?"

Louis. "No laws were then exiſting to prevent me from it."

Pref. "You ordered an army to march againſt the citizens of Paris. Your ſatellites have ſhed the blood of ſeveral of them, and you would not remove this army till the taking of the Baſtile and a general inſurrection announced to you that the people were victorious. The

ſpeeches

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ſpeeches you made on the 9th, 12th, and 14th of July to the deputations of the conſtituent aſſembly, ſhew what were your intentions; and the maſſacres of the Thuilleries riſe in evidence againſt you.—What have you to anſwer?"

Louis. "I was maſter at that time to order the troops to march; but I never had an intention of ſhedding blood."

Pref. "After theſe events, and in ſpite of the promiſes which you made on the 15th in the conſtituent aſſembly, and on the 17th in the town-houſe of Paris, you have perſiſted in your projects againſt national liberty. You long eluded the execution of the decrees of the 11th of Auguſt, reſpecting the abolition of perſonal ſervitude, the feudal government, and tythes: you long refuſed acknowledging the rights of man: you doubled the number of the life-guards, and called the regiment of Flanders to Verſailles: you permitted, in orgies held before your eyes, the national cockade to be trampled under foot, the white cockade to be hoiſted, and the nation to be ſlandered. At laſt, you rendered neceſſary a freſh inſurrection, occaſioned the death of ſeveral citizens, and did not change your language till after your guards had been defeated, when you renewed your perfidious promiſes. The proofs of theſe facts are in your obſervations of the 18th of September, in the decrees of the 11th of Auguſt, in the minutes of the conſtituent aſſembly, in the events of Verſailles of the 5th and 6th of October, and in the converſation you had on the ſame day with a deputation of the conſtituent aſſembly, when you told them you would enlighten yourſelf with their councils, and never recede from them.—What have you to anſwer?"

Louis. "I have made the obſervations which I thought juſt on the two firſt heads. As to the cockade, it is falſe; it did not happen in my preſence?"

Pref. "You took an oath at the federation of the 14th of July, which you did not keep. You ſoon tried to corrupt the public opinion, with the aſſiſtance of Talon who acted in Paris, and Mirabeau who was to have excited counter-revolutionary movements in the provinces.—What have you to anſwer?"

Louis. "I do not know what happened at that time; but the whole is anterior to my acceptance of the conſtitution."

Pref. "You laviſhed millions of money to effect this corruption, and you would even uſe popularity as a means of enſlaving the people. Theſe facts are the reſult of a memorial of Talon, on which you have made your marginal comments in your own hand-writing, and of a letter which Laporte wrote to you on the 19th of April; in which, recapitulating a converſation he had with Rivarol, he told you, that the millions which you had been prevailed upon to throw away had been productive of nothing. For a long time you had meditated on a plan of eſcape. A memorial was delivered to you on the 28th of February, which pointed out the means for you to effect it; you approve of it by marginal notes.—What have you to anſwer?"

Louis. "I felt no greater pleaſure than that of relieving the needy: this proves no deſign."

Pref. "On the 28th a great number of the nobles and military came into your apartments in the caſtle of the Thuilleries to favour that eſcape: you wanted to quit Paris on the 10th of April to go to St Claud.—What have you to anſwer?"

Louis. "This accuſation is abſurd."

Pref. "But the reſiſtance of the citizens made you ſenſible that their diſtruſt was great; you endeavoured to diſcard it by communicating to the conſtituent aſſembly a letter, which you addreſſed to the agents of the nation near foreign powers, to announce to them that you had freely accepted the conſtitutional articles, which had been preſented to you; and, notwithſtanding, on the 21ſt you took flight with a falſe paſſport. You left behind a proteſt againſt theſe ſelf-ſame conſtitutional articles; you ordered the miniſters to ſign none of the acts iſſued by the National Aſſembly; and you forbade the miniſter of juſtice to deliver up the ſeals of ſtate. The public money was laviſhed to inſure the ſucceſs of this treachery, and the public force was to protect it, under the orders of Bouillé, who ſhortly before had been charged with the maſſacre of Nancy, and to whom you wrote on this head, "to take care of his popularity, becauſe it would be of ſervice to you." Theſe facts are proved by the memorial of the 23d of February, with marginal comments in your own hand-writing; by your declaration of the 20th of June, wholly in your own hand-writing; by your letter of the 4th of September 1790 to Bouillé; and by a note of the latter, in which he gives you an account of the uſe he made of 993,000 livres, given by you, and employed partly in trepanning the troops who were to eſcort you.—What have you to anſwer?"

Louis. "I have no knowledge whatever of the memorial of the 23d of February. As to what relates to my journey to Varennes, I appeal to my declaration to the commiſſaries of the conſtituent aſſembly at that period."

Pref. "After your detention at Varennes, the exerciſe of the executive power was for a moment ſuſpended in your hands, and you again formed a conſpiracy. On the 17th of July the blood of citizens was ſhed in the Champ de Mars A letter, in your own hand-writing, written in 1790 to La Fayette, proves that a criminal coalition ſubſiſted between you and La Fayette, to which Mirabeau acceded. The reviſion began under theſe cruel auſpices; all kinds of corruptions were made uſe of. You have paid for libels, pamphlets, and newſpapers, deſigned to corrupt the public opinion, to diſcredit the aſſignats, and to ſupport the cauſe of the emigrants. The regiſters of Septeuil ſhew what immenſe ſums have been made uſe of in theſe liberticide manœuvres.—What have you to anſwer?"

Louis. "What happened on the 17 of July has nothing at all to do with me. I know nothing of it."

Pref. "You ſeemed to accept the conſtitution on the 14th of September; your ſpeeches announced an intention of ſupporting it, and you were buſy in overturning it, even before it was completed. A convention was entered into at Pilnitz on the 24th of July, between Leopold of Auſtria and Frederic-William of Brandenburg, who pledged themſelves to re-erect in France the throne of abſolute monarchy, and you were ſilent upon this convention till the moment when it was known by all Europe.—What have you to anſwer?"

Louis. "I made it known as ſoon as it came to my knowledge; beſides, every thing that refers to this ſubject concerns the miniſter."

Pref.

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Pref. " Arles had hoisted the standard of rebellion; you favoured it by sending three civil commissaries, who made it their business not to repress the counter-revolutionists, but to justify their proceedings.—What have you to answer?"

Louis. " The instructions which were given to the commissaries must prove what was their mission; and I knew none of them when the ministers proposed them to me."

Pref. " Avignon, and the county of Venaissin, had been united with France; you caused the decree to be executed; but a month after that time civil war desolated that country. The commissaries you sent thither helped to ravage it.—What have you to answer?"

Louis. " I do not remember what delay has been caused in the execution of the decree; besides, this occurrence has no personal reference to me; it only concerns those that have been sent, not those who sent them."

Pref. " Nimes, Montauban, Mende, Jales, felt great shocks during the first days of freedom. You did nothing to stifle those germens of counter-revolution till the moment when Saillant's conspiracy became manifestly notorious.—What have you to answer?"

Louis. " I gave, in this respect, all the orders which were proposed to me by the ministers."

Pref. " You sent 22 battalions against the Marseillois, who marched to reduce the counter-revolutionists of Arles.—What have you to answer?"

Louis. " I ought to have the pieces referring to this matter, to give a just answer."

Pref. " You gave the southern command to Witgenstein, who wrote to you on the 21st of April 1792, after he had been recalled: 'A few instants more, and I shall call around the throne of your Majesty thousands of French, who are again become worthy of the wishes you formed for their happiness.'—What have you to answer?"

Louis. " This letter is dated since his recall; he has not been employed since. I do not recollect this letter."

Pref. " You paid your late life-guards at Coblentz; the registers of Septeuil attest this; and general orders signed by you prove that you sent considerable remittances to Bouille, Rochefort, Vauguyon, Choiseul, Beaupre, Hamilton, and the wife of Polignac.—What have you to answer?"

Louis. " When I first learned that my life-guards assembled beyond the Rhine, I stopped their pay: as to the rest, I do not remember."

Pref. " Your brothers, enemies to the state, caused the emigrants to rally under their banners: they raised regiments, took up loans, and concluded alliances in your name: you did not disclaim them; but at the moment when you were fully certain that you could no longer cross their projects, your intelligence with them by a note, written by Louis Stanislaus Xavier, signed by your two brothers, was conceived in these words:

'I wrote to you, but it was by post, and I could say nothing. We are two here, who make but one; one in sentiments, one in principles, one in zeal of serving you. We keep silence; because, were we to break it too soon, it would ruin you: but we shall speak as soon as we shall be certain of your support, and that moment is near. If we are spoken to on the part of those people, we shall hear nothing; but if on your part, we will listen: we shall pursue our road straight. It is therefore desired that you will enable us to say something. Do not stand on ceremonies. Be easy about your safety: we only exist to serve you; we are eagerly occupied with this point, and all goes on well; even our enemies feel themselves too much interested in your preservation to commit an useless crime which would terminate in their own destruction. Adieu.

'L. S. Xavier and
'Charles Philippe.'

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" What have you to answer?"

Louis. " I disowned all the proceedings of my brothers, according as the constitution prescribed me to do, and from the moment they came to my knowledge. Of this note I know nothing."

Pref. " The soldiers of the line, who were to be put on the war establishment, consisted but of 100,000 men at the end of December, you therefore neglected to provide for the safety of the state from abroad. Narbonne required a levy of 50,000 men, but he stopped the recruiting at 26,000, in giving assurances that all was ready; yet there was no truth in these assurances. Servan proposed after him to form a camp of 20,000 men near Paris; it was decreed by the legislative assembly; you refused your sanction.—What have you to answer?"

Louis. " I had given to the ministers all the orders for expediting the augmentation of the army: in the month of December last, the returns were laid before the Assembly. If they deceived themselves, it is not my fault."

Pref. " A flight of patriotism made the citizens repair to Paris from all quarters. You issued a proclamation, tending to stop their march; at the same time our camps were without soldiers. Dumourier, the successor of Servan, declared that the nation had neither arms, ammunition, nor provisions, and that the posts were left defenceless. You waited to be urged by a request made to the minister Lagard, when the legislative assembly wished to point out the means of providing for the external safety of the state, by proposing the levy of 42 battalions. You gave commission to the commanders of the troops to disband the army, to force whole regiments to desert, and to make them pass the Rhine, to put them at the disposal of your brothers, and of Leopold of Austria, with whom you had intelligence. This fact is proved by the letter of Toulongeon, governor of Franche Comté.—What have you to answer?"

Louis. " I know nothing of this circumstance; there is not a word of truth in this charge."

Pref. " You charged your diplomatical agents to favour this coalition of foreign powers and your brothers against France, and especially to cement the peace between Turkey and Austria, and to procure thereby a larger number of troops against France from the latter. A letter of Choiseul-Gouffier, ambassador at Constantinople verifies the fact.—What have you to answer?"

Louis. " M. Choiseul did not speak the truth: no such thing has ever been."

Pref. " The Prussians advanced against our frontiers: your minister was summoned on the 28th of July to give an account of the state of our political relations with

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with Prussia; you answered, on the 10th, that 50,000 Prussians were marching against us, and that you gave notice to the legislative body of the formal acts of the pending hostilities, in conformity to the constitution. —What have you to answer?"

Louis. "It was only at that period I had knowledge of it: all the correspondence passed with the ministers."

Pref. "You entrusted Dabancourt, the nephew of Calonne, with the department of war; and such has been the success of your conspiracy, that the posts of Longwy and Verdun were surrendered to the enemy at the moment of their appearance.—What have you to answer?"

Louis. "I did not know that Dabancourt was M. Calonne's nephew. I have not divested the posts. I would not have permitted myself such a thing. I know nothing of it, if it has been so."

Pref. "You have destroyed our navy—a vast number of officers belonging to that corps had emigrated; there scarcely remained any to do duty in the harbours; meanwhile Bertrand was granting passports every day; and when the legislative body represented to you his criminal conduct on the 8th of March, you answered, that you were satisfied with his services—What have you to answer?"

Louis. "I have done all I could to retain the officers. As to M. Bertrand, since the legislative assembly presented no complaint against him that might have put him in a state of accusation, I did not think proper to turn him out of office."

Pref. "You have favoured the maintenance of absolute government in the colonies; your agents fomented troubles and counter-revolutions throughout them, which took place at the same epoch when it was to have been brought about in France, which indicates plainly that your hand laid this plot.—What have you to answer?"

Louis. "If there are any of my agents in the colonies, they have not spoken the truth; I had nothing to do with what you have just mentioned."

Pref. "The interior of the state was convulsed by fanatics; you avowed yourself their protector, in manifesting your evident intention of recovering by them your ancient power.—What have you to answer?"

Louis. "I cannot answer to this; I know nothing of such a project."

Pref. "The legislative body had passed a decree on the 29th of January against the factious priests; you suspended its execution.—What have you to answer?"

Louis. "The constitution reserved to me the free right to refuse my sanction of the decrees."

Pref. "The troubles had increased; the minister declared, that he knew no means in the laws extant to arraign the guilty. The legislative body enacted a fresh decree, which you likewise suspended.—What have you to say to this?"

[Louis replied in the same manner as in the preceding charge.]

Pref. "The uncitizen-like conduct of the guards whom the constitution had granted you, had rendered it necessary to disband them. The day after, you sent them a letter expressive of your satisfaction, and continued their pay. This fact is proved by the treasurer of the civil list.—What have you to answer?"

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Louis. "I only continued them in pay till fresh ones could be raised, according to the tenor of the decree."

Pref. "You kept near your person the Swiss guards: the constitution forbade you this, and the legislative assembly had expressly ordained their departure.—What have you to answer?"

Louis. "I have executed all the decrees that have been enacted in this respect."

Pref. "You had private companies at Paris, charged to operate movements useful to your projects of a counter-revolution. Dangremont and Gilles were two of your agents, who had salaries from the civil list. The receipts of Gilles, who was ordered to raise a company of 60 men, shall be presented to you.—What have you to answer?"

Louis. "I have no knowledge whatever of the projects laid to their charge: the idea of a counter-revolution never entered into my mind."

Pref. "You wished to suborn, with considerable sums, several members of the legislative and constituent assemblies. Letters from St Leon and others evince the reality of these deeds.—What have you to answer?"

Louis. "Several persons presented themselves with similar decrees, but I have waved them."

Pref. "Who are they that presented you with those projects?"

Louis. "The plans were so vague that I do not recollect them now."

Pref. "Who are those to whom you gave money?"

Louis. "I gave money to nobody."

Pref. "You suffered the French name to be reviled in Germany, Italy, and Spain, since you omitted to demand satisfaction for the bad treatment which the French suffered in those countries.—What have you to answer?"

Louis. "The diplomatical correspondence will prove the contrary; besides, this was a concern of the ministers."

Pref. "You reviewed the Swiss on the 10th of August at five o'clock in the morning; and the Swiss were the first who fired upon the citizens."

Louis. "I went on that day to review all the troops that were assembled about me; the constituted authorities were with me, the department, the mayor, and municipality; I had even invited thither a deputation of the national assembly, and I afterwards repaired into the midst of them with my family."

Pref. "Why did you draw troops to the castle?"

Louis. "All the constituted authorities saw that the castle was threatened; and as I was a constituted authority, I had a right to defend myself."

Pref. "Why did you summon the mayor of Paris in the night between the 9th and 10th of August to the castle?"

Louis. "On account of the reports that were circulated."

Pref. "You have caused the blood of the French to be shed."

Louis. "No, Sir, not I."

Pref. "You authorized Septeuil to carry on a con-

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considerable trade in corn, ſugar, and coffee, at Hamburg. This fact is proved by a letter of Septeuil."

Louis. "I know nothing of what you ſay."

Preſ. "Why did you affix a veto on the decree which ordained the formation of a camp of 20,000 men?"

Louis. "The conſtitution left to me the free right of refuſing my ſanction of the decrees; and even from that period I had demanded the aſſemblage of a camp at Soiſſons."

Preſident, addreſſing the convention. "The queſtions are done with."—(To Louis)—"Louis, is there any thing that you with to add?"

Louis. "I requeſt a communication of the charges which I have heard, and of the pieces relating thereto, and the liberty of chooſing counſel for my defence."

Valazé, who ſat near the bar, preſented and read to Louis Capet the pieces, viz. The memoir of Laporte and Mirabeau, and ſome others, containing plans of a counter-revolution.

Louis. "I diſown them."

Valazé next preſented ſeveral other papers, on which the act of accuſation was founded, and aſked the king if he recognized them. Theſe papers were the following:

Valazé. "Letter of Louis Capet, dated June 29th 1790, ſettling his connections with Mirabeau and La Fayette to effect a revolution in the conſtitution."

Louis. "I reſerve to myſelf to anſwer the contents"—(Valazé read the letter.)—"It is only a plan, in which there is no queſtion about a counter-revolution; the letter was not to have been ſent."

Valazé. "Letter of Louis Capet, of the 22d of April, relative to converſations about the Jacobins, about the preſident of the committee of finances, and the committee of domains; it is dated by the hand of Louis Capet."

Louis. "I diſown it."

Valazé. "Letter of Laporte, of Thurſday morning, March 3d, marked in the margin in the hand-writing of Louis Capet with March 3d 1791, implying a pretended rupture between Mirabeau and the Jacobins."

Louis. "I diſown it."

Valazé. "Letter of Laporte without date, in his hand-writing, but marked in the margin by the hand of Louis Capet, containing particulars reſpecting the laſt moments of Mirabeau, and expreſſing the care that had been taken to conceal from the knowledge of men ſome papers of great concern which had been depoſited with Mirabeau."

Louis. "I diſown it as well as the reſt."

Valazé. "Plan of a conſtitution, or reviſion of the conſtitution, ſigned La Fayette, addreſſed to Louis Capet, April 6th 1790, marked in the margin with a line in the hand-writing."

Louis. "Theſe things have been blotted out by the conſtitution."

Valazé. "Do you know this writing?"

Louis. "I do not."

Valazé. "Your marginal comments?"

Louis. "I do not."

Valazé. "Letter of Laporte of the 19th of April, marked in the margin by Louis Capet April 19. 1791, mentioning a converſation with Reverol."

Louis. "I diſown it."

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Valazé. "Letter of Laporte, marked April 16. 1791, in which it ſeems complaints are made of Mirabeau, the abbé Perigord, André, and Beaumetz, who do not ſeem to acknowledge ſacrifices made for their ſake."

Louis. "I diſown it likewiſe."

Valazé. "Letter of Laporte of the 23d of February 1791, marked and dated in the hand-writing of Louis Capet; a memorial annexed to it, reſpecting the means of his gaining popularity."

Louis. "I know neither of theſe pieces."

Valazé. "Several pieces without ſignature, found in the caſtle of the Thuilleries, in the gap which was ſhut in the walls of the palace, relating to the expences to gain that popularity."

Preſident. "Previous to an examination on this ſubject, I wiſh to aſk a preliminary queſtion: Have you cauſed a preſs with an iron door to be conſtructed in the caſtle of the Thuilleries, and had you your papers locked up in that preſs?

Louis. "I have no knowledge of it whatever."

Valazé. "Here is a day-book written by Louis Capet himſelf, containing the penſions he has granted out of his coffer from 1776 till 1792, in which are obſerved ſome douceurs granted to Acloque."

Louis. "This I own, but it conſiſts of charitable donations which I have made."

Valazé. "Different liſts of ſums paid to the Scotch companies of Noailles, Gramont, Montmorency, and Luxembourg, on the 9th of July 1791."

Louis. "This is prior to the epoch when I forbade them to be paid."

Preſ. "Louis where had you depoſited thoſe pieces which you own?"

Louis. "With my treaſurer."

Valazé. "Do you know theſe penſion-liſts of the life-guards, the one hundred Swiſs, and the king's guards for 1792?"

Louis. "I do not."

Valazé. "Several pieces relative to the conſpiracy of the camp of Jales, the originals of which are depoſited among the records of the department of L'Ardéche."

Louis. "I have not the ſmalleſt knowledge of them."

Valazé. "Letter of Bouillé, dated Mentz, bearing an account of 993,000 livres received of Louis Capet."

Louis. "I diſown it."

Valazé. "An order for payment of 168,000 livres, ſigned Louis, indorſed Le Bonneirs, with a letter and billet of the ſame"

Louis. "I diſown it."

Valazé. "Two pieces relative to a preſent made to the wife of Polignac, and to Lavauguyon and Choiſeul."

Louis. "I diſown them as well as the others."

Valazé. "Here is a note ſigned by the two brothers of the late king, mentioned in the declaratory act."

Louis. "I know nothing of it."

Valazé. "Here are pieces relating to the affair of Choiſeul-Gouffier at Conſtantinople,"

Louis. "I have no knowledge of them."

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Valazé. "Here is a letter of the late king to the bishop of Clermont, with the answer of the latter, of the 16th of April 1791."

Louis. "I disown it."

President. "Do you not acknowledge your writing and your signet?"

Louis. "I do not."

President "The seal bears the arms of France."

Louis. "Several persons made use of that seal."

Valazé. "Do you acknowledge this list of sums paid to Gilles?"

Louis. "I do not."

Valazé. "Here is a memorandum for indemnifying the civil list for the military pensions; a letter of Dufresne St Leon, which relates to it."

Louis. "I know none of these pieces."

142 He is allowed to nominate his own counsel;

When the whole had been investigated in this manner, the president, addressing the king, said, "I have no other questions to propose—have you any thing more to add in your defence?"—"I desire to have a copy of the accusation (replied the king), and of the papers on which it is founded. I also desire to have a counsel of my own nomination." Barrere informed him, that his two first requests were already decreed, and that the determination respecting the other would be made known to him in due time.

It would have been an excess of cruelty to refuse a request so reasonable in itself; it was therefore decreed that counsel should be allowed to the king, and his choice fell upon M. M. Tronchet, Lamoignon Malesherbes, and Deseze; he had previously applied to M. Target, who excused himself on account of his age and infirmity. On the 26th of December, the king appeared for the last time at the bar of the convention; and M. Deseze read a defence which the counsel had prepared, and which was equally admired for the solidity of the argument and the beauty of the composition.

When the defence was finished, the king arose, and holding a paper in his hand, pronounced in a calm manner, and with a firm voice, what follows: "Citizens, you have heard my defence; I now speak to you, perhaps for the last time, and declare that my counsel have asserted nothing to you but the truth; my conscience reproaches me with nothing: I never was afraid of having my conduct investigated; but I observed with great uneasiness, that I was accused of giving orders for shedding the blood of the people on the 10th of August. The proofs I have given through my whole life of a contrary disposition, I hoped would have saved me from such an imputation, which I now solemnly declare is entirely groundless."

143 But is condemned to death by a small majority.

The discussion was fatally closed on the 16th of January. After a sitting of near 34 hours, the punishment of death was awarded by a small majority of the convention, and several of these differed in opinion from the rest, respecting the time when it should be inflicted; some contending that it should not be put in execution till after the end of the war, while others proposed to take the sense of the people, by referring the sentence to the primary assemblies.

M. Deseze then solemnly invoked the assembly in the name of his colleagues, to consider by what a small majority the punishment of death was pronounced against the dethroned monarch. "Do not afflict France (added this eloquent advocate) by a judgment that will appear terrible to her, when *five* voices only were presumed sufficient to carry it." He appealed to eternal justice, and sacred humanity, to induce the convention to refer their sentence to the tribunal of the people. "You have either forgotten or destroyed (said the celebrated M. Tronchet) the lenity which the law allows to criminals, of requiring at least *two-thirds* of the voices to constitute a definitive judgment."

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The sentence was ordered to be executed in twenty-four hours.

144 And executed.

The king and his family had been for some time kept separate from each other; but he was now allowed to see them, and to choose an ecclesiastic to attend him. The meeting, and, above all, the separation from his family, was tender in the extreme. On Monday the 21st January, at eight o'clock in the morning, the unfortunate monarch was summoned to his fate. He ascended the scaffold with a firm air and step. Raising his voice, he said, "Frenchmen, I die innocent; I pardon all my enemies; and may France"—at this instant the inhuman Santerre ordered the drums to beat, and the executioners to perform their office. When they offered to bind his hands, he started back as if about to resist; but recollected himself in a moment, and submitted. When the instrument of death descended, the priest exclaimed, "Son of St Louis, ascend to heaven." The bleeding head was held up, and a few of the populace shouted *Vive la Republique.* His body was interred in a grave that was filled up with quicklime, and a guard placed around till it should be consumed.

145 Character of this unfortunate monarch.

Thus fell Louis XVI. He possessed from nature a good understanding, which, however, was blunted by the early indulgences of a court. He had a strong sense of justice, and his humanity, was perhaps extreme. One defect rendered his virtues of little value, which was the possession of an irresolute and unsteady character. Unambitious, and easily advised, he was without difficulty induced to change his purposes, especially by his queen, whose connection with the house of Austria had always tended to render his counsels unpopular. Whether he was or was not connected with the foreign invaders of his country, posterity must decide; but all men of sense and moderation must be convinced that he was murdered by a band of ruffians. Indeed a sentence so infamous, and in all respects unjust, is not to be found in the records of history. The greater part of the charges brought against him were trifling. Those which seem to be of importance relate to conduct authorised by the constitution under which he acted; and that constitution declared his person inviolable. The severest punishment that he could incur by law, was not death, but deposition; and there is no doubt, that in putting him to death the French nation broke the social compact which their representatives made with him. In a political view, this tragical event was injurious to the republican cause throughout Europe. Few men out of France ventured to justify it; and in all countries it excited the most violent indignation against the rulers of the new republic.

146 Rupture with Great Britain.

New enemies were now hastening to join the general league against France. We do not mean here to enter into a detail of the political struggles that occurred in any other country, than that in the narrative of whose revolution we are now engaged. It will therefore only be necessary to remark in general, that the British government at this time thought itself endangered by the propagation of those speculative opinions which had

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...the French monarchy. Almoſt all the men of property in the kingdom concurred with the miniſtry in thinking a war with France neceſſary for the purpoſe of ſupporting the conſtitution at home. After the 10th of Auguſt the Britiſh miniſter had been recalled; but the new republic ſtill ſuffered the former ambaſſador at London, M. Chauvelin, to remain in England.

147 The ...

... The ...

The real and ſerious grounds of quarrel on the part of Great Britain were chiefly two; the decree of the 15th of November 1792, by which it was truly obſerved that encouragement to rebellion was held out to the ſubjects of every ſtate, and that war was thereby waged againſt every eſtabliſhed government. Of this decree the French executive council gave explanations, denying the fairneſs of the interpretation put upon it, and alleging, that the intention of the convention was only to give aid to ſuch countries as *had already* acquired their freedom, and by a declaration of the general will requeſted aid for its preſervation. But this explanation cannot be admitted. The decree expreſsly ſays, that the French nation will grant aſſiſtance to all who wiſh to procure liberty; and when it is conſidered what their notions of liberty are, it cannot be doubted but that their intention was to excite rebellion in foreign nations. The ſecond cauſe of diſpute referred to the opening of the Scheldt. This river runs from Brabant through the Dutch territory to the ſea. The Dutch had ſhut up the mouth of it, and prevented any maritime commerce from being carried on by the people of Brabant by means of the river. To render themſelves popular in Brabant, the French had declared, that they would open the navigation of the Scheldt. But Great Britain had ſome time before bound herſelf by treaty with the Dutch to aſſiſt them in obſtructing this navigation, and now declared to the French, that the project of opening the Scheldt muſt be renounced if peace with Great Britain was to remain. The French alleged, that by the law of nations navigable rivers ought to be open to all who reſide on their banks; but that the point was of no importance either to France or England, and even of very little importance to Holland; that if the people of Brabant themſelves chooſe to give it up, they would make no objection. It has been thought remarkable, that the Dutch gave themſelves no trouble about the matter. They did not aſk the aſſiſtance of England; and with that coolneſs which is peculiar to their character, the merchants individually declared, that if the Scheldt was opened, they could manage their commerce as well at Antwerp as at Amſterdam. But in all this there is nothing ſtrange. Among the Dutch were many republicans, who wiſhed for the downfal of the ſtadtholder. Theſe rejoiced at every thing which diſtreſſed him, or had a tendency to render his office uſeleſs in the eyes of the people. Others, who thought differently, were afraid to ſpeak their ſentiments, as Dumourier was in their neighbourhood with a victorious army. The reſult of the whole was, that M. Chauvelin was commanded by the Britiſh government to leave the country. The French executive council gave powers to another miniſter M. Maret, to negociate, and requeſted a paſſport for him; but he was not ſuffered to land. The haughty republicans having thus far humbled themſelves before the Britiſh government, at laſt, on the 1ſt of February 1793, on the motion of Briſſot, the national convention decreed, among other articles, that "George king of England had never ceaſed ſince the revolution of the 10th of Auguſt 1792 from giving to the French nation proofs of his attachment to the concert of crowned heads; that he had drawn into the ſame lake the ſtadtholder of the United Provinces; that, contrary to the treaty of 1783, the Engliſh miniſtry had granted protection to the emigrants and others who have openly appeared in arms againſt France; that they have committed an outrage againſt the French republic, by ordering the ambaſſador of France to quit Great Britain; that the Engliſh have ſtopped divers boats and veſſels laden with corn for France, whilſt, at the ſame time, contrary to the treaty of 1786, they continue the exportation of it to other foreign countries; that to thwart more efficaciouſly the commercial tranſactions of the republic with England, they have by an act of parliament prohibited the circulation of aſſignats. The convention therefore *declare*, that in conſequence of theſe acts of hoſtility and aggreſſion, the French republic is at war with the king of England and the ſtadtholder of the United Provinces."

148 War declared againſt the king of England and ſtadtholder of Holland.

The abſurdity of pretending that any treaty with France made in 1783 could be violated by protecting the emigrants who fled from the fury of the convention, muſt be obvious to every reader. The convention was conſidered a rebellious uſurpation of the government with which ſuch a treaty was made. The prohibition of aſſignats was certainly contrary to no law, and was ſanctioned by every motive of expediency, unleſs the convention could prove that all nations were bound by the law of nature to riſk their own credit upon the credit of the French republic.

149 And againſt Spain.

About a fortnight after this declaration againſt Britain, war was likewiſe declared againſt Spain; and in the courſe of the ſummer France was at war with all Europe, excepting only Swiſſerland, Sweden, Denmark, and Turkey.

150 Progreſs of Dumourier.

In the mean time General Dumourier, who was proceeding agreeably to his orders, made an attack upon Holland; but in doing this he diſperſed his troops in ſuch a manner as to expoſe them much to any attack on the ſide of Germany. He commanded General Miranda to inveſt Maeſtricht, while he advanced to block up Breda and Bergen-op-zoom. The firſt of theſe places, viz. Breda, ſurrendered on the 24th of February; Klundert was taken on the 26th; and Gertruydenberg on the 4th of March. But here the triumphs of Dumourier ended. The ſieges of Williamſtadt and Bergen-op-zoom were vigorouſly but unſucceſsfully preſſed. On the 1ſt of March General Clairfait having paſſed the Roer, attacked the French poſts, and compelled them to retreat with the loſs of 2000 men.

151 He is defeated.

The following day the archduke attacked them anew with conſiderable ſucceſs. On the 3d the French were driven from Aix-la-Chapelle, with the loſs of 4000 men killed and 1600 taken priſoners.

The ſiege of Maeſtricht was now raiſed, and the French retreated to Tongres, where they were alſo attacked and forced to retreat to St Tron. Dumourier here joined them, but did not bring his army along with him from the attack upon Holland. After ſome ſkirmiſhes a general engagement took place at Neerwinden. It was fought on the part of the French with great obſtinacy; but they were at length overpowered by the number of their enemies, and perhaps alſo by the treachery of their commander. This defeat was fatal. The French loſt 3000 men, and 6000 immediately

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immediately deſerted and went home to France. Dumourier continued to retreat, and on the 22d he was again attacked near Louvain. He now, through the medium of Colonel Mack, came to an agreement with the Imperialiſts that his retreat ſhould not be ſeriouſly interrupted. It was now fully agreed between him and the Imperialiſts, that while the latter took poſſeſſion of Condé and Valenciennes, he ſhould march to Paris, diſſolve the convention, and place the ſon of the late king upon the throne.

152 And joins the allies:

The rapid retreat and ſucceſſive defeats of General Dumourier rendered his conduct ſuſpicious. Commiſſioners were ſent from the executive power for the purpoſe of diſcovering his deſigns. They diſſembled, and pretended to communicate to him a ſcheme of a counter-revolution. He confeſſed his intention of diſſolving the convention and the Jacobin club by force, which he ſaid would not exiſt three weeks longer, and of reſtoring monarchy. On the report of theſe commiſſioners the convention ſent Bournonville the miniſter of war to ſuperſede and arreſt Dumourier, along with Camus, Blancal, La Marque, and Quinette, as commiſſioners. The attempt on the part of theſe men was at leaſt hazardous, to ſay no more of it; and the reſult was, that on the firſt of April Dumourier ſent them priſoners to General Clairfait's head quarters at Tournay as hoſtages for the ſafety of the royal family. He next attempted to ſeduce his army from their fidelity to the convention; but he ſpeedily found that he had much miſtaken the character of his troops. Upon the report that their general was to be carried as a criminal to Paris, they were ſeized with ſudden indignation; but when they found that an attempt was making to prevail with them to turn their arms againſt their country, their ſentiments altered. On the 5th of April two proclamations were iſſued; one by General Dumourier, and the other by the prince of Saxe Cobourg, declaring that their only purpoſe was to reſtore the conſtitution of 1789, 1790, and 1791. Prince Cobourg announced that the allied powers wiſhed merely to co-operate with General Dumourier in giving to France her conſtitutional king and the conſtitution ſhe had formed for herſelf, declaring, on his word of honour, that he came not to the French territory for the purpoſe of making conqueſts. On the ſame day Dumourier went to the advanced guard of his own camp at Maulde. He there learned that the corps of artillery had riſen upon their general, and were marching to Valenciennes; and he ſoon found that the whole army had determined to ſtand by their country. Seven hundred cavalry and 800 infantry was the whole amount of thoſe that deſerted with Dumourier to the Auſtrians, and many of them afterwards returned.

153 But his army refuſe to act with him.

154 Proclamations of the Imperial commander in chief.

By the defection of Dumourier, however, the whole army of the north was diſſolved, and in part diſbanded, in preſence of a numerous, well-diſciplined, and victorious enemy. The Pruſſians were at the ſame time advancing on the Rhine with an immenſe force, and about to commence the ſiege of Mentz. In the interior of the republic more ſerious evils if poſſible were ariſing. In the departments of La Vendée and La Loire, or the Provinces of Brittany and Poitou, immenſe multitudes of emigrants and other royaliſts had gradually aſſembled in the courſe of the winter. They profeſſed to act in the name of Monſieur, as regent of France.

155 State of France at this period.

About the middle of March they advanced againſt Nantz to the amount of 40,000. In the beginning of April they defeated the republicans in two pitched battles, and poſſeſſed themſelves of 50 leagues of country. They even threatened by their own efforts to ſhake the new republic to its foundation. On the 8th of April a congreſs of the combined powers aſſembled at Antwerp. It was attended by the prince of Orange and his two ſons, with his excellency Vander Spiegel, on the part of Holland; by the duke of York and Lord Auckland on the part of Great Britain; by the prince of Saxe Cobourg, Counts Metterinch, Starenberg, and Mercy Dargenteau, with the Pruſſian, Spaniſh, and Neapolitan envoys. It was here determined to commence active operations againſt France. The prince of Cobourg's proclamation was recalled, and a ſcheme of conqueſt announced.

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156 Congreſs of the combined powers.

157 The republican army again aſſembled.

Commiſſioners from the convention now ſet up the ſtandard of the republic anew, and the ſcattered battalions flocked around it. General Dampierre was appointed commander, and on the 13th he was able to reſiſt a general attack upon his advanced poſts. On the 14th, his advanced guard yielded to ſuperior numbers, but on the 15th was victorious in a long and well-fought battle. On the 23d the Auſtrians were again repulſed, and on the 1ſt of May General Dampierre was himſelf repulſed in an attack upon the enemy. On the 8th another engagement took place, in which the French general was killed by a cannon ball. On the 23d a very determined attack was made by the allies upon the French fortified camp of Famars, which covered the town of Valenciennes. The French were overcome, and in the night abandoned their camp. In conſequence of this the allies were enabled to commence the ſiege of Valenciennes; for Condé had been blockaded from the 1ſt of April.

About the ſame time General Cuſtine on the Rhine made a violent but unſucceſsful attack upon the Pruſſians, in conſequence of which they were ſoon enabled to lay ſiege to Mentz. The Corſican General Paoli revolted at this period; and the new republic, aſſaulted from without by the whole ſtrength of Europe, was undermined by treachery and faction within.

158 Revolt of Paoli.

159 State of parties in France, and the revolutionary tribunal eſtabliſhed.

While the country was in a ſtate verging upon utter ruin, parties in the convention were gradually waxing more fierce in their animoſity; and regardleſs of what was paſſing at a diſtance, they ſeemed only anxious for the extermination of each other. In the month of March, the celebrated *Revolutionary Tribunal* was eſtabliſhed for the purpoſe of trying crimes committed againſt the ſtate; and the Girondiſt party, the mildneſs of whoſe adminiſtration had contributed not a little to increaſe the evils of their country, began to ſee the neceſſity of adopting meaſures of ſeverity. But the public calamities, which now rapidly followed each other in ſucceſſion, were aſcribed by their countrymen to their imbecility or perfidy. This gave to the party of the *Mountain* a fatal advantage. On the 15th of April the communes of the 48 ſections of Paris preſented a petition, requiring that the chiefs of the Girondiſts therein named ſhould be impeached and expelled from the convention. This was followed up on the 1ſt of May by another petition from the ſuburb of St Antoine. The Girondiſt party in the mean time impeached Marat, but he was acquitted by the jury at his trial. The

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Mountain, by the affiſtance of the Jacobin club, had now obtained a complete aſcendancy over the city of Paris. The Girondiſts or Brifſotine party had therefore to retrieve the misfortunes of the capital; and to perform this, the Mountain reſolved to make the ſame uſe of the people of the capital againſt the Girondiſt party that they had formerly done againſt the monarch and court of Verſailles. It is unneceſſary to ſtate in detail the tumults that occurred every day in Paris during the remaining part of the month of May. On the 31ſt of May, at five o'clock in the morning, the tocſin was ſounded, the generale was beat, and the ſection aſſembled. All was in motion and terror. The citizens flew to arms, and aſſembled round the convention. Some deputations demanded a decree of accuſation againſt 22 of its members. The day, however, was paſſed without deciſion. On the afternoon of the 1ſt of June an armed force made the ſame demand. On the 2d of June this was repeated, the tocſin again ſounded, and an hundred pieces of cannon ſurrounded the national hall. At laſt Barrere mounted the tribune. He was conſidered as a moderate man, and reſpected by both parties; but he now artfully deſerted the Girondiſts. He invited the denounced members voluntarily to reſign their character of repreſentatives. Some of them complied, and the preſident attempted to diſſolve the ſitting; but the members were now ſurrounded in the new hall. Henriot, commander of the armed force, compelled them to remain; and the obnoxious deputies, amounting to upwards of 90 in number, were put under arreſt, and a decree of denunciation againſt them paſſed.

162 Marat murdered by a woman.

It is obvious, that on this occaſion the liberties of France were trodden under foot. The minority of the national repreſentatives, by the aſſiſtance of an armed force raiſed in the capital, compelled the majority to ſubmit to their meaſures, and took the leading members priſoners. Thus the city of Paris aſſumed to itſelf the whole powers of the French republic; and the nation was no longer governed by repreſentatives freely choſen, but by a minority of their members, whoſe ſentiments the city of Paris and the Jacobin club had thought fit to approve of. Human hiſtory is a mass of contradictions. The *Mountain* party came into power by proclaiming liberty, and by violating fundamental principles. How far the plea of political neceſſity may excuſe their conduct, we ſhall not venture to decide explicitly. Certain it is, however, that they ſoon commenced a career of the moſt terrible energy both at home and abroad that is recorded in the annals of nations.

163 Their republican conſtitution eſtabliſhed by the Mountain.

One of the firſt acts of the Mountain junto after their triumph was to finiſh the republican conſtitution. Previous to their fall, the Girondiſts had brought forward the plan of a conſtitution, chiefly the work of Condorcet; but it never was ſanctioned by the convention, and was too intricate to be practically uſeful. The new conſtitution now framed, which was afterwards ſanctioned by the nation, but has never yet been put in practice, aboliſhes the former mode of electing the repreſentatives of the people through the medium of *electoral* aſſemblies, and appoints them to be choſen immediately by the *primary* aſſemblies, which are made to conſiſt of from 200 to 600 citizens, each man voting by ballot or open vote at his option. There is one deputy for every 40,000 individuals, and population is the ſole baſis of repreſentation. The elections take place every year on the 1ſt of May. Electoral aſſemblies are ſtill retained for one purpoſe. Every 200 citizens in the primary aſſemblies name one elector; and an aſſembly of all the electors of the department is afterwards held, which elects candidates for the *executive council*, or miniſtry of the republic. The legiſlative body chooſes out of this liſt of candidates the members of the executive council. One half of this council is renewed by each legiſlature in the laſt month of the ſeſſion. Every law, after it is paſſed by the legiſlative body, is ſent to the departments. If in more than half of the departments the tenth of the primary aſſemblies of each have not objected to it, it becomes effectual. Trial by jury is eſtabliſhed. National conventions may be called for altering the conſtitution, and *muſt* be called, if required by the tenth of the primary aſſemblies of each department in a majority of the departments.

The publication of this conſtitution procured no ſmall degree of applauſe to the convention and the Mountain party. The rapidity with which it was formed (being only a fortnight) ſeemed to caſt a juſt reproach upon the ſlowneſs of their antagoniſts, and it was regarded as a proof of their being decidedly ſe-

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164 The Mountain party at the helm.

165 Several departments declare againſt the new conſtitution.

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rious in the cauſe of republicaniſm. No regard, however, has been paid to it by the convention, which has declared itſelf permanent, nor indeed does it ſeem poſſible to carry it into execution.

164 Fall of Condé and Valenciennes.

We have mentioned that Condé was inveſted from the beginning of April. It did not yield till the 10th of July, when the garriſon was ſo much reduced by famine and diſeaſe, that out of 4000 men, of which it originally conſiſted, only 1500 were fit for ſervice. The eyes of all Europe were in the mean time fixed upon the ſiege of Valenciennes. Colonel Moncrieff had contended, that batteries ought immediately to be placed under the walls without approaching it by regular parallels; but the Imperial engineer Mr Ferraris aſſerted, that the work of the great Vauban muſt be treated with more reſpect; and his opinion was adopted by the council of war. The trenches were opened on the 14th of June. Few ſallies were attempted by the garriſon, on account of the ſmallneſs of their number. The inhabitants at firſt wiſhed to ſurrender; but the violence of the bombardment prevented their aſſembling or giving much trouble on that head to General Ferrand the governor. Much of the labour of the ſiege conſiſted of mines and countermines. Some of theſe having been ſucceſsfully ſprung by the allies, the town was ſurrendered on the 27th of July by capitulation to the Duke of York, who took poſſeſſion of it in behalf of the emperor of Germany. The ſiege of Mentz was at the ſame time going on. It ſuffered much from famine. At laſt, after an unſucceſsful attempt by the French army on the Rhine for its relief, Mentz ſurrendered on the 22d of July.

165 The allied powers divided as to their future proceeding.

At the termination of the ſiege of Valenciennes it is ſaid that the allied powers were at a loſs how to proceed next. The Auſtrian commanders are ſaid to have preſented two plans: The firſt was to penetrate to Paris by the aſſiſtance of the rivers which fall into the Seine; the other was to take advantage of the conſternation occaſioned by the ſurrender of Valenciennes, and with 50,000 light troops to penetrate ſuddenly to Paris, while a debarcation ſhould be made on the coaſt of Brittany to aſſiſt the royaliſts. The propoſal of the Britiſh miniſtry was, however, adopted, which was, to divide the grand army, and to attack Weſt Flanders, beginning with the ſiege of Dunkirk. This determination proved ruinous to the allies. The French found means to vanquiſh in detail that army, which they could not encounter when united.

166 Unfortunate conſequences of the diviſion of their forces.

It is ſaid that the Duke of York was in ſecret correſpondence with Omeron the governor of Dunkirk; but he was removed before any advantage could be taken of his treachery. On the 24th of Auguſt the Duke of York attacked and drove the French outpoſts into the town, after an action in which the Auſtrian General Dalton was killed. A naval armament was expected from Great Britain to co-operate in the ſiege, but it did not arrive. In the mean time, a ſtrong republican force menaced the covering army of the allies, which was commanded by General Freytag. He was ſoon attacked and totally routed. The ſiege was raiſed. The Britiſh loſt their heavy cannon and baggage, with ſeveral thouſand men; and the convention, believing that their General Houchard could have cut off the Duke of York's retreat, tried and executed him for this neglect of duty.

Prince Cobourg and General Clairfait in the mean time unſucceſsfully attempted to beſiege Cambray and Bouchain. Queſnoy was, however, taken by General Clairfait on the 11th of September; and here finally terminated for the preſent campaign the ſucceſs of the allies in the Netherlands.

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A conſiderable part of the French army of the north took a ſtrong poſition near Maubeuge, where they were blockaded by Prince Cobourg; but upon the 15th and 16th of October he was repeatedly attacked by the French troops under General Jourdan, who ſucceeded Houchard. The French had now recovered their vigour. They brought into the field a formidable train of artillery, in which were many 24 pounders. Commiſſioners from the convention harangued the ſoldiers, threatened the fearful, and applauded the brave. Crowds of women, without confuſion, went through the ranks, diſtributing ſpirituous liquors in abundance, and carrying off the wounded. The attacks were repeated and terrible on both ſides; but the Auſtrians had conſiderably the diſadvantage, and Prince Cobourg retired during the night. The French now menaced maritime Flanders. They took Furnes and beſieged Nieuport. A detachment of Britiſh troops ready to ſail to the Weſt Indies were haſtily ſent to Oſtend, and prevented for the preſent the farther progreſs of the French.

Such was the multiplicity of the events that now occurred in France, that it is difficult to ſtate the outlines of them with any tolerable perſpicuity. We have already mentioned the extenſive diſſenſions that occurred throughout the republic in conſequence of the triumph of the Mountain party on the 31ſt of May. The department of Calvades was firſt in arms againſt the convention under the command of General Felix Wimpfen; but before the end of July the inſurrection was quieted, after a few ſlight ſkirmiſhes. But the fœderaliſm of the cities of Marſeilles, Lyons, and Toulon, ſtill remained. Lyons was attacked on the 8th of Auguſt by the conventional troops. Several actions followed, which were attended with great loſs both on the part of the aſſailants and of the beſieged. The city was reduced almoſt to ruins; but it held out during the whole month of September. The beſieging General Kellerman was removed from his command, on account of his ſuppoſed inactivity; and the city ſurrendered on the 8th of October to General Doppet, a man who had lately been a phyſician. Such was the rage of party zeal at this time, that the walls and public buildings of Lyons were ordered to be deſtroyed, and its name changed to that of *Ville Affranchie*. Many hundreds of its citizens were dragged to the ſcaffold on account of their alleged treaſonable reſiſtance to the convention. The victorious party, wearied by the ſlow operation of the *guillotine*, at laſt deſtroyed their priſoners in multitudes, by firing grape-ſhot upon them. Such indeed was the unrelenting character of the Mountain at this time, not only here but through the whole republic, that they themſelves pretended not to excuſe it, but declared that terror was with them *the order of the day*.

167 Lyons beſieged by the conventional troops, and taken.

168 Unrelenting character of the conquerors.

In the end of July General Cartaux was ſent againſt Marſeilles. In the beginning of Auguſt he gained ſome ſucceſſes over the advanced fœderaliſt troops. On the 24th he took the town of Aix, and the Marſeillois ſub-

169 The Marſeillois obliged to ſubmit.

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submitted. But the leading people of the important town and harbour of Toulon entered into a negociation, and submitted to the British admiral Lord Hood, under conditions that he should preserve as a depoſit the town and the port for Louis XVII. and under the ſtipulation that he ſhould aſſiſt in reſtoring the conſtitution of 1789. The ſiege of Toulon was commenced by General Cartaux in the beginning of September. It continued without much vigour during that and the whole of the ſucceeding month. Neapolitan, Spaniſh, and Engliſh troops, were brought by ſea to aſſiſt in its defence. In the beginning of November, General Cartaux was removed to the command of the army in Italy, and General Dugommier ſucceeded him. General O'Hara arrived with reinforcements from Gibraltar, and took upon him the command of the town, under a commiſſion from his Britannic majeſty. On the 30th of November, the garriſon made a powerful ſally to deſtroy ſome batteries that were erecting upon heights which commanded the city. The French were ſurpriſed, and the allies ſucceeded completely in their object; but, elated by the facility of their conqueſt, the allied troops ruſhed forward in purſuit of the flying enemy, contrary to their orders, and were unexpectedly met by a ſtrong French force that was drawn out to protect the fugitives. General O'Hara now came from the city to endeavour to bring off his troops with regularity. He was wounded in the arm and taken priſoner. The total loſs of the allies in this affair was eſtimated at nearly one thouſand men. The French had now muſtered in full force around Toulon, and prepared for the attack. It was begun on the 19th of December in the morning, and was chiefly directed againſt Fort Mulgrave, defended by the Britiſh. This fort was protected by an entrenched camp, 13 pieces of cannon, 36 and 24 pounders, &c. 5 mortars, and 3000 troops. Such was the ardour of aſſault, that it was carried in an hour, and the whole garriſon was deſtroyed or taken. The allies now found it impoſſible to defend the place; and in the courſe of the day embarked their troops, after having ſet on fire the arſenal and ſhips. A ſcene of confuſion here enſued, ſuch as has not been known in the hiſtory of modern wars. Crowds of people of every rank, age, and ſex, hurried on board the ſhips, to avoid the vengeance of their enraged countrymen. Some of the inhabitants began to fire upon their late allies; others in deſpair were ſeen plunging into the ſea, making a vain effort to reach the ſhips; or putting an end at once to their own exiſtence upon the ſhore. Thirty-one ſhips of the line were found by the Britiſh at Toulon; thirteen were left behind; ten were burnt; four had been previouſly ſent to the French ports of Breſt and Rochefort, with 5000 republicans who could not be truſted; and Great Britain finally obtained by this expedition three ſhips of the line and five frigates.

French ſubmit to Lord Hood, 1793.

171 Who is at length obliged to evacuate it.

On the ſide of Spain the war produced nothing of importance; and in the mountainous country of Piedmont it went on ſlowly. Nice and Chamberry were ſtill retained by the French; but more terrible ſcenes were acting in other quarters. In La Vendée a moſt bloody war was perſiſted in by the royaliſts. In that quarter of the country the language of the reſt of France is little underſtood. The people were ſuperſtitious, and had acquired little idea of the new opinions that had lately been propagated in the reſt of the empire. They were chiefly headed by prieſts, and regarded their cauſe as a religious one. Their mode of warfare uſually was, to go on in their ordinary occupations as peaceable citizens, and ſuddenly to aſſemble in immenſe bands, inſomuch that at one time they were ſaid to amount to 150,000 men. They beſieged Nantz and the city of Orleans, and even Paris itſelf was not thought altogether ſafe from their enterpriſes. The war was inconceivably bloody. Neither party gave quarter; and La Vendée proved a dreadful drain to the population of France. On the 28th of June, the conventional general Biron drove the royaliſts from Lucon; and Nantz was relieved by general Beyſſer. After ſome ſucceſs, general Weſterman was ſurpriſed by them, and compelled to retreat to Parthenay. In the beginning of Auguſt the royaliſts were defeated by general Roſſignol; but on the 10th of that month, under Charette their commander in chief, they again attacked Nantz, but ſuffered a repulſe. It would be tedious to give a minute detail of this obſcure but cruel war. The royaliſts were often defeated and ſeemingly diſperſed, but as often aroſe in crowds around the aſtoniſhed republicans. At laſt, however, about the middle of October, they were completely defeated, driven from La Vendée, and forced to divide into ſeparate bodies. One of theſe threw itſelf into the iſland of Noirmoutier, where they were ſubdued; another took the road of Maine and Brittany, where they ſtruggled for ſome time againſt their enemies, and were at laſt cut to pieces or diſperſed.

172 Proceedings of the royaliſts in La Vendée.

The royaliſts had long expected aſſiſtance from England; and an armament under the earl of Moira was actually fitted out for that ſervice, but it did not arrive till too late, and returned home without attempting a landing.

173 Horrid cruelty of the Mountain party.

The Mountain party always diſgraced their ſucceſſes by dreadful cruelties. Humanity is ſhocked, and hiſtory would almoſt ceaſe to obtain credit, were we to ſtate in detail the unrelenting cruelties which were exerciſed againſt the unfortunate royaliſts, chiefly by Carrier, a deputy from the convention, ſent into this quarter with unlimited powers. Multitudes of priſoners were crowded on board veſſels in the Loire, after which the veſſels were ſunk. No age nor ſex was ſpared; and theſe executions were performed with every circumſtance of wanton barbarity and inſult.

174 Progreſs of the allies on the Rhine.

On the ſide of the Rhine a great variety of events occurred during the months of Auguſt and September. Several engagements at firſt took place, in which the French were, upon the whole, ſucceſsful. In September, however, Landau was inveſted by the combined powers; and it was reſolved to make every poſſible effort to drive the French from the ſtrong lines of Weiſſemburg, on the river Lauter. On the 13th of October, the Auſtrian general Wurmſer made a grand attack upon theſe lines. The French ſay that their generals betrayed them, and ſuffered the lines to be taken almoſt without reſiſtance. The general of the allies confeſſed that the lines might have held out for ſeveral days. The French retreated to Hagenau, from which they were driven on the 18th; and ſuffered two other defeats on the 25th and 27th. Some of the principal citizens of Straſbourg now ſent a private deputation to general Wurmſer, offering to ſurrender the town, to be preſerved as a depoſit to be reſtored to

Louis

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Louis XVII. General Wurmſer refuſed to accept of it upon theſe terms, inſiſting upon an abſolute ſurrender to his Imperial Majeſty. In conſequence of the delay occaſioned by diſagreement, the negociation was diſcovered, and the citizens of Straſbourg engaged in the plot were ſeized by St Juſt and Lebas, commiſſioners from the convention, and brought to the ſcaffold. Prodigious efforts were now made by the French to recover their ground in this quarter. General Irembert was ſhot at the head of the army on the 9th of November, upon a charge, probably ill-founded, of treachery in the affair of the lines of Weiſſembourg. On the 14th, however, Fort Louis was taken by the allies, not without ſuſpicion of treachery in the governor. But here the ſucceſs of general Wurmſer might be ſaid to terminate. On the 21ſt the republican army drove back the Auſtrians, and penetrated almoſt to Hagenau. An army from the Moſelle now advanced to co-operate with the army of the Rhine. On the 17th the Pruſſians were defeated near Sarhruck. Next day their camp at Bliſcaſtel was ſtormed, and the French advanced to Deux Ponts. On the 29th and 30th the French were repulſed with great loſs in two violent attacks made on the duke of Brunſwick near Lautern. But it now appeared that the French had come into the field with a determination to conquer whatever it might coſt. Every day was a day of battle, and torrents of blood were ſhed on both ſides. The allies had the advantage of poſſeſſing the ground, which, in that quarter, at ſuch a late ſeaſon of the year, is very ſtrong on account of its inequalities and moraſſes. In military ſkill, the French officers and thoſe of the allies were perhaps nearly equal; but the French army was by far the moſt numerous; and although not a match in point of diſcipline, yet it derived no ſmall ſuperiority from the enthuſiaſm with which the troops were animated. On the 8th of December, under the command of general Pichegru, the French carried the redoubts which covered Hagenau by means of the bayonet.

175 The French at length ſucceſsful in that quarter.

This modern inſtrument of deſtruction, againſt which no defenſive weapon is employed, is always moſt ſucceſsful in the hands of the moſt intrepid; and it was now a dreadful engine in the hands of French enthuſiaſm.—The fineſt troops that ever Europe produced were unable to withſtand the fury of the republicans, which ſeemed only to increaſe in proportion to the multitude of companions that they loſt. On the 22d the allies were driven with immenſe ſlaughter from Hagenau, notwithſtanding the immenſe works they had thrown up for their defence. The entrenchments on the heights of Rheiſhoffen, Jauderſhoffen, &c. were conſidered as more impregnable than thoſe of Jemappe. They were ſtormed by the army of the Moſelle and the Rhine, under generals Hoche and Pichegru. On the 23d and 24th, the allies were purſued to the heights of Wrotte. On the 26th, the entrenchments there were forced by the bayonet, after a deſperate conflict. On the 27th, the republican army arrived at Weiſſembourg in triumph. General Wurmſer retreated acroſs the Rhine, and the duke of Brunſwick haſtily fell back to cover Mentz. The blockade of Landau, which had laſted four months, was raiſed. Fort Louis was evacuated by the allies, and Kaiſerſlatern, Germerſheim, and Spires, ſubmitted to the French.—During this laſt month of the year 1793, the loſs of men on both ſides in this quarter was immenſe, and unexampled in the hiſtory of modern war. It is even ſaid that it might amount to more than 70,000 or 80,000 men.

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Thus far we have attended to the military affairs of the republic for ſome time paſt. Very violent efforts were in the mean time made at Paris by the new adminiſtration, eſtabliſhed under the auſpices of the Jacobin club, and of the party called the *Mountain*. The new republican conſtitution had been preſented to the people in the primary aſſemblies, and accepted. The buſineſs, therefore, for which the convention was called together, that of forming a conſtitution for France, was at an end; and it was propoſed that they ſhould diſſolve themſelves, and order a new legiſlative body to aſſemble, according to the rules preſcribed by that conſtitution. This was, no doubt, the regular mode of procedure; but the ruling party conſidered it as hazardous to convene a new aſſembly, poſſeſſing only limited powers, in the preſent diſtracted ſtate of the country. It was indeed obvious, that France at this time ſtood in need of a dictatorſhip, or of a government poſſeſſed of more abſolute authority than can be enjoyed by one that acts, or even pretends to act, upon the moderate principles of freedom. It was therefore determined that the convention ſhould remain undiſſolved till the end of the war; and that a *revolutionary* government, to be conducted by its members, ſhould be eſtabliſhed, with uncontrouled powers. Committees of its own body were ſelected for the purpoſe of conducting every department of buſineſs. The chief of theſe committees was called the *committee of public ſafety*. It ſuperintended all the reſt, and gave to the adminiſtration of France all the ſecrecy and diſpatch which have been accounted peculiar to a military government, together with a combination of ſkill and energy hitherto unknown among mankind. A correſpondence was kept up with all the Jacobin clubs throughout the kingdom. Commiſſioners from the convention were ſent into all quarters, with unlimited authority over every order of perſons. Thus a government poſſeſſed of infinite vigilance, and more abſolute and tyrannical than that of any ſingle deſpot, was eſtabliſhed; and the whole tranſactions and reſources of the ſtate were known to the rulers. On the 23d of Auguſt, Barrere, in name of the committee of public ſafety, procured the celebrated decree to be paſſed for placing the whole French nation in a *ſtate of requiſition* for the public ſervice. "From this moment (ſays the decree) till that when all enemies ſhall have been driven from the territory of the republic, all Frenchmen ſhall be in permanent readineſs for the ſervice of the army. The young men ſhall march to the combat; the married men ſhall forge arms, and tranſport the proviſions; the women ſhall make tents and clothes, and attend in the hoſpitals; the children ſhall make lint of old linen; the old men ſhall cauſe themſelves to be carried to the public ſquares, to excite the courage of the warriors, to preach hatred againſt the enemies of the republic; the cellars ſhall be waſhed to procure ſaltpetre; the ſaddle-horſes ſhall be given up to complete the cavalry; the unmarried citizens, from the age of 18 to 25, ſhall march firſt, and none ſhall ſend a ſubſtitute; every battalion ſhall have a banner, with this inſcription, *The French nation riſen againſt tyrants.*" The decree alſo regulates the mode of organizing this maſs. A decree more tyrannical

176 Violent efforts of the Mountain party.

177 France decreed to be in a ſtate of requiſition.

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ramical theory it was proposed to form an uniform decimal system; and when it was first published, Englishmen were at a loss whether to regard it as the last effort of powerful government, or as a wild project which could produce nothing but confusion. The effects of it, however, have been truly terrible. We have already mentioned some of them in the horrid contest which occurred upon the Rhine, and Europe was soon destined to bear witness to still more extraordinary events.

178 General trial and execution.

In the end of July, general Custine was brought to trial, and executed, in consequence of a variety of accusations of treachery to his country, subject to the convention. The queen was next brought to trial before the revolutionary tribunal, on the 15th of October.

179 Murder of the queen.

The charges against her were very various; but the chief tendency of them was to prove that she had always been hostile to the revolution, and had excited all the efforts that had been made by the court against it. On the 16th of October, this beautiful woman, whom fortune once placed so high, ended her days on a scaffold, after a mock trial, in which no regard was paid either to justice or decency. She behaved with much dignity and composure, and appeared deeply impressed with a sense of religion. The members of the convention who had been at the head of the Girondist party, and had either been detained in prison since the 31st of May, or seized in the departments to which they had retired, were afterwards brought to trial. On the 30th of October, 21 of them were executed, viz. Brissot, Vergniaud, Gensonné, Duprat, Lehardi, Ducos, Fonfrede, Boileau, Gardien, Duchatel, Sillery, Fauchet, Dufriche, Duperret, La Source, Carra, Beauvais, Mainville, Antiboul, Vigée, and Lacaze. Seventy-one were still detained in confinement. The duke of Orleans was afterwards condemned, on a charge of having aspired to the sovereignty from the beginning of the revolution. His execution gave satisfaction to all parties. His vote for the punishment of death upon the trial of the late king had done him little honour even in the opinion of the Mountain, and had rendered him odious to all the rest mankind.

180 Execution of the heads of the Girondist party.

181 And of the Duke of Orleans.

182 Executions become perfectly common.

The executions of persons of all ranks, particularly of priests and nobles, became now so common, that it would be in vain to attempt to give any detail of them. Every person brought before the revolutionary tribunal was condemned as a matter of course. The Jacobins seemed insatiable in their thirst after blood, and the people at large appeared to regard their conduct with unaccountable indifference.

183 A new table of weights and measures established.

When the human mind is once roused, its activity extends to every object. At this time a new table of weights and measures was established by the convention, in which the decimal arithmetic alone is employed. The court of Spain had the liberality, notwithstanding the war, to suffer M. Mechain to proceed in his operations for ascertaining a degree of the meridian in that country. The united labours of triangles from Barcelona to Perpignan; and from this place the mensuration was continued to Paris. M. de Lambre, and M. [illegible] to Dunkirk, ascertained a degree of latitude in the vicinity of the latter. In all, 12 degrees of the meridian were measured; of which the mean is 57027 toises, and by this the universal standard of measure is determined. M. M. de Borda and Cassini determined the length of a pendulum that vibrates seconds, in vacuo and in a mean temperature at Paris, to be 3 feet and 8.16 lines. M. M. Lavoisier and Hauy found that a cubic foot of distilled water at the freezing point weighs in vacuo 70 pounds and 62 gros French weight. We shall insert a table of the measures and weights now established.

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Long Measure.

Metres.		*French Toises.*
10,000,000 =	a quadrant of the meridian which is the principle on which the new measure is founded -	5132.439
100,000 =	an hundredth part of a quadrant, or decimal degree of the meridian -	51.324
1000 =	a [illegible], or mile -	5.13
100 =	a decametre, } a Parisian measure, }	51.323
10 =	a perch }	5.132

		Fat. Feet. Lines.
1 =	a *metre*, or rectilineal unit - -	3 0 11.44
$\frac{1}{10}$ or 0.1 =	a *decimetre* or palm	0 3 8.544
$\frac{1}{100}$ or 0.01 =	a *centremetre*, or digit - -	0 0 4.434
$\frac{1}{1000}$ or 0.001 =	a *millemetre* -	0 0 .443

Superficial Measure.

Sq. Metres.		*Sq. Feet.*
10,000 =	an *are*, or superficial unit, being a square the side of which is 100 metres in length - -	9479.51
1000 =	a *deciare*, or tenth of an *are*; a superficies an hundred metres long, and ten broad -	9483.1
100 =	a *centiare* - - -	948.31

Measures of Capacity.

Cub. decimetres		*Paris Pints.*	*Paris Inch.*
1000 =	the cubic *metre*, or cade or tun - -	1051½	78.9
100 =	*decicade*, or *feter*	105⅞	7.89
10 =	*centicade*, or bushel	10½	.789
1 =	cubic *decimetre*, or pint	1 1/16	.0789

Weights.

Cub. decimetres of water.		*French Pounds.*
1000 =	the weight of a cubic *metre*, or cade of water, is called a *bar* or *millier* - -	2044.4
100 =	⅒ of a *bar*, or *decibar*, or quintal	204.44
10 =	[illegible] of a *bar*, or centibar, or *decal*	20.444

		lb. oz. gros. grains.
1 =	the weight of a cubic decimetre of water is called a *grave*, or pound -	2 8 5 49
.1 =	⅒ of a *grave*, or *decigrave*, or ounce	0 3 2 12.1
.01 =	[illegible] of a grave, or centigrave, or dram	0 0 2 44.41
.001 =	the weight of a cubic centimetre of water, is named a *gravet*, or millie -	0 0 0 13.841
.0001 =	*decigravet*, or grain	0 0 0 1.3841
.00001 =	*centigravet* -	0 0 0 0.13841

A piece

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A piece of silver coin weighing a *centigrave*, and a *franc* of silver, according to the former standard will be worth 40 sols 10½ deniers. The *milliare*, or thousand *metres*, is substituted for the mile; and the *are*, for the arpent in land-measure. The latter two are to each other as 49 to 25. The astronomical circles with which M. M. de Borda and Cassini made the observations, are divided according to this plan. The quadrant contains 100 degrees, and each degree 100 minutes. Hence the minute of a great circle on our globe is equal to a *milliare*, or new French mile. If, for the reduction of this measure, we estimate the Paris toise, according to the comparison made with the standard kept in the Royal Society of London, at 6.3925 English feet, the *milliare* or minute will be equal to 1093.633 yards, and the *metre* 3.280899 feet.

113 A new kalendar formed.

At the same period a new kalendar was formed.—By it the year is made to begin with the autumnal equinox, and is divided into 12 months. These are called Vindemaire, Brumaire, Frimaire, Nivos, Ventos, Pluvios, Germinal, Florial, Praireal, Messidor, Fervidor, and Fructidor. The months consist of 30 days each, and are divided into three decades. The days of each decade are known by the names of Primidi, Duodi, Tridi, &c. to Decadi: and the day of rest is appointed for every tenth day, instead of the seventh. The day (which begins at midnight) is distributed into ten parts, and these are decimally divided and subdivided. Five supernumerary days are added every year after the 30th of Fructidor. To these is given the absurd appellation of *Sans Cullottides*, a word borrowed from a term of reproach *(sans culotte)*, which had often been bestowed on the republican party from the meanness of their rank and fortune; but which that party now attempted to render honourable and popular. The childish folly of this innovation has struck every person with surprize, as it can serve no good purpose whatever. It is a wonderful instance of the waywardness of the human mind, which can occupy itself one moment with deeds of savage barbarity, and the next with a matter so unimportant as the artificial division of time.

115 Decay of religion.

The religion of France had been gradually losing its influence; and on the 7th of November, Gobet bishop of Paris, along with a great multitude of other ecclesiastics, came into the hall of the convention, and solemnly resigned their functions and renounced the Christian religion. All the clergymen, whether Protestant or Catholic, that were members of the convention, followed this example, exepting only Gregoire, whom we formerly mentioned as having been one of the first priests that joined the *Tiers Etat* after the meeting of the States General. He had the courage to profess himself a Christian although he said that the emoluments of his bishopric were at the service of the republic. With the acclamations of the convention, it was decreed that the only French deities hereafter should be Liberty, Equality, Reason, &c. and they would seem to have consecrated these as a kind of new objects of worship.—What political purpose the leaders in the convention intended to serve by this proceeding does not clearly appear; unless, perhaps, their object was to render the French manners and modes of thinking so completely new, that it should never be in their power to return to the state from which they had just emerged, or to unite in intercourse with the other nations of Europe. The populace, however, could not at once relinquish entirely the religion of their fathers. The Commune of Paris ordered the churches to be shut up, but the Convention found it necessary to annul this order; and Robespierre gained no small degree of popularity by supporting the liberty of religious worship on this occasion. Hebert and Fabre d'Eglantine, who led the opposite party, hastened their own fall by this ill-judged contempt of popular opinion.

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117 Quarrels between the Mountain and Jacobins.

For, now that the republic saw itself successful in all quarters, when the Mountain party and the Jacobins had no rival at home, and accounted themselves in no immediate danger from abroad, they began to split into factions, and the fiercest jealousies arose. The Jacobin Club was the usual place in which their contests were carried on; and at this time Robespierre acted the part of a mediator between all parties. He attempted with great art to turn their attention from private animosities to public affairs. He spread a report that an invasion of Great Britain was speedily to take place. He therefore proposed that the Jacobin Club should set themselves to work to discover the vulnerable parts of the British constitution and government. They did so: They made speeches, and wrote essays without number. And in this war the most fierce and turbulent band of men that ever perhaps existed in any country occupied and amused for a very considerable time. What is no less singular, a great number of British subjects favoured the plans of these reforming Atheists; the conduct of the government giving ample scope for censure.

118 A provisional acknowledgement of the republic by the allies rejected by the convention.

The winter passed away in tolerable quietness, and no military enterprise was undertaken either by the allies or by the French. On the 1st of February, Barrere asserted in the Convention that the confederate powers were willing *provisionally* to acknowledge the French republic, to consent to a cessation of hostilities for two years, at the end of which a lasting peace should be ratified by the French people. But this proposal the Convention declared itself determined to reject, as affording to the other nations of Europe the means of undermining their new government. In the mean time, the revolutionary government was gradually becoming more vigorous. Thirty committees of the Convention managed the whole business of the state, without sharing much of the direct executive government, which rested in the committee of public safety. These different committees were engaged in the utmost variety of objects. The ruling party had no competitors for power. Without confusion or opposition, therefore, the most extensive plans were rapidly carried into effect. The Convention was little more than a court in which every project was solemnly registered. In the same session 30 decrees would sometimes be passed upon objects the most widely different. The finances were under one committee, at the head of which was Cambon.—This committee, found resources for the most lavish expenditure. The assignats were received as money throughout the state; and thus a paper mill was said to have become more valuable than a mine of gold. Their credit was supported by an arbitrary law regulating the *maximum* or highest price of all provisions, and by the immense mass of wealth which had come into the hands of the Convention by seizing the church lands, and by confiscating the property of royalists, emigrants, and

133 Vigorous state of the revolutionary government.

139 Management of the finances and other resources of the nation.

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perſons condemned by the revolutionary tribunal. So unequally had property been divided under the ancient government, that by means of theſe confiſcations about ſeven-tenths of the national territory was ſuppoſed to become the lands of the public. To this was added the plunder of the churches, conſiſting of gold and ſilver vaſes, and utenſils employed in divine worſhip, along with other articles of leſs value; among which may be mentioned the innumerable church bells, which were reſerved as raw material for the manufacture of 15,000 pieces of cannon. Theſe reſources formed a maſs of property ſuch as never was poſſeſſed by any government.

Other committees were engaged in very different objects. Highways were conſtructed, and canals planned and cut throughout the country. Immenſe manufactories of arms were everywhere eſtabliſhed. At Paris alone 1100 muskets were daily fabricated, and 100 pieces of cannon caſt every month. Public ſchools were aſſiduouſly inſtituted, and the French language taught in its purity from the Pyrenees to the Rhine. The French Convention poſſeſſed immenſe reſources, and they did not heſitate to laviſh them upon their ſchemes. Every ſcience and every art was called upon to aid, and the moſt accompliſhed men in every profeſſion were employed in giving ſplendour to their country. The chemiſts, in particular, gave eſſential aid by the facility with which they ſupplied materials for the manufacture of gun-powder; and in return for their ſervices, Lavoiſier, the greateſt of them, ſuffered death by a moſt iniquitous ſentence. Not fewer than 200 new dramatic performances were produced in leſs than two years; the object of which was to attach the people to the preſent order of things. The vigour with which the committees of ſubſiſtence exerted themſelves is particularly to be remarked. As all Europe was at war with France, and as England, Holland, and Spain, the three maritime powers, were engaged in the conteſt, it had been thought not impoſſible to reduce France to great diſtreſs by famine, eſpecially as it was imagined that the country had not reſources to ſupply its immenſe population. But the preſent leaders of that country acted with the policy of a beſieged garriſon. They ſeized upon the whole proviſions in the country, and carried them to public granaries. They regiſtered the cattle, and made their owners reſponſible for them.—They provided the armies abundantly, and, as the people were accurately numbered, they dealt out in every diſtrict, on ſtated occaſions, what was abſolutely neceſſary for ſubſiſtence, and no more. To all this the people ſubmitted; and indeed, throughout the whole of the mixed ſcenes of this revolution, the calm judgment of the hiſtorian is not a little perplexed. We cannot avoid admiring the patience with which the people at large endured every hardſhip that was repreſented as neceſſary to the common cauſe, and the enthuſiaſtic energy with which they laviſhed their blood in defence of the independence of their country. At the ſame time, we muſt regard with indignation and diſguſt the worthleſs intrigues by means of which the ſanguinary factions in the Convention and the capital alternately maſſacred each other.

190 Diſſenſions of the Jacobins increaſe.

During the winter the diſſenſions of the Jacobins ſtill increaſed. They were divded into two clubs, of which the new one aſſembled at a hall which once belonged to the Cordeliers. The leaders of it were Hebert, Ronſin, Vincent, and others: but the old ſociety retained its aſcendency, and Robeſpierre was now decidedly its leader. This extraordinary man had gradually accumulated in his own perſon the confidence of the people and the direction of the government. As the committees were above the Convention, which was become little more than a ſilent court of record, ſo the committee of public ſafety was above the other committees. Robeſpierre was the leader of this ruling committee. Barrere, St Juſt, Couthon, and others of its members, only acted a ſecondary part. They laboured in the buſineſs of the ſtate, but the radical power was with Robeſpierre. He ſurrounded the members of the Convention with ſpies. He was jealous and implacable, and ſet no bounds to the ſhedding of blood. On the 25th of March he brought to trial the following active Jacobins, who were condemned and executed on the following day: Hebert, Ronſin, Momoro, Vincent, Du Croquet, Kocq, Col. Laumur, M. M. Bourgeois, Mazuel, La Boureau, Ancard, Le Clerc, Proly, Deſfieux, Anacharſis Cloots, Pereira, Florent Armand, Deſcombes, and Debuiſon. Not ſatisfied with this, on the 2d of April he brought to trial nine of thoſe who had once been his moſt vigorous aſſociates, Danton, Fabre d'Eglantine, Bazire, Chabot, Philippeaux, Camille Deſmoulins, Lacroix, Delaunay d'Angers, Herault de Sechelles, who, along with Weſterman, were executed on the evening of the 5th.

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191 Preparations for the campaign of 1794, and plan of the allies.

Still, however, the preparations for the enſuing campaign were proceeding with unabated vigour. The committee for military affairs, at the head of which were Carnot, La Fitte, d'Aniſſi, and others, was buſy in arranging along the frontiers the immenſe force which the requiſition had called forth. Plans of attack and defence were made out by this committee; and when approved by the committee of public ſafety they were ſent to the generals to be executed. On the other ſide, the allies were making powerful preparations for another attempt to ſubjugate France. The Emperor himſelf took the field at the head of the armies in the Netherlands. The plan of the campaign is ſaid to have been formed by the Auſtrian Colonel Mack. Weſt Flanders was to be protected by a ſtrong body of men; the main army was to penetrate to Landrecies, and getting within the line of French frontier towns, it was to cut them off from the interior by covering the country from Maubeuge to the ſea. The plan was *bold*. It belongs to military men to judge whether this was not its only merit. When attempting to put it in execution, the allies muſt have been ill informed of the immenſe force which the French were collecting againſt them. Even the town of Liſle alone, which is capable of containing a numerous army within its walls, and which was to be left in their rear, ſhould have ſeemed an inſurmountable objection to the plan.

192 State of the allied armies.

On the 16th of April the Auſtrian, Britiſh, and Dutch armies aſſembled on the heights above Cateau, and were reviewed by the emperor. On the following day they advanced in eight columns againſt the French, drove in their whole poſts, and penetrated beyond Landrecies; which place the French attempted to relieve, but without ſucceſs. The allied army now amounted to 187,000 men, who were diſpoſed in the following manner; 15,000 Dutch and 15,000 Auſtrians, under the prince of Orange and general Latour, formed the ſiege

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siege of Landrecies; 15,000 British and 15,000 Austrians, commanded by the duke of York and general Otto, encamped towards Cambray. The emperor and the prince of Saxe-Cobourg, at the head of 60,000 Austrians, were advanced as far as Guise; 12,000 Hessians and Austrians under general Worms were stationed near Douay and Bouchain; Count Kaunitz with 15,000 Austrians defended the Sambre and the quarter near Maubeuge; and, lastly, general Clairfait, with 40,000 Austrians and Hanoverians, protected Flanders from Tournay to the sea; 60,000 Prussians, for whom a subsidy had been paid by Great Britain, were expected in addition to these, but they never arrived.

The French now commenced their active operations. On the morning of the 26th of April they attacked the duke of York near Cateau in great force. After a severe conflict they were repulsed, and their general Chapuy was taken prisoner. At the same time they attacked the troops under his Imperial majesty, but were there also repulsed in a similar manner; losing in all 57 pieces of cannon. On the same day, however, general Pichegru advanced from Lisle, attacked and defeated general Clairfait, took 32 pieces of cannon; and, in the course of a few days, made himself master of Warwick, Menin, and Courtray. On the 29th of April, the garrison of Landrecies surrendered to the allies. When this event was known in the convention, it excited a considerable degree of alarm. It was, however, the last effectual piece of success enjoyed by the allies during this disastrous campaign. General Clairfait was again completely defeated by Pichegru in a general engagement; and it was found necessary to send the duke of York to his assistance. This movement was no doubt unavoidable; but the effect of it was, that it split down the allied army into a variety of portions, capable of carrying on a desultory warfare, but unfit for the vigorous objects of conquest. On the 10th the duke of York was attacked near Tournay by a body of the enemy, whom he repulsed; but he was unable to join Clairfait upon whose destruction the French were chiefly bent: for at the same time that the duke of York was occupied by the attack upon himself, Pichegru fell upon Clairfait with such irresistible impetuosity, that he was compelled to retreat in confusion, and a part of his army appears to have fled to the neighbourhood of Bruges. While Pichegru was thus advancing successfully in West Flanders, general Jourdan advanced in East Flanders from Maubeuge, crossed the Sambre, and forced general Kaunitz to retreat. On the 18th, however, general Kaunitz succeeded in repulsing the enemy in his turn, and they recrossed the Sambre with considerable loss.

193 Fall of Landrecies.

196 Success of Pichegru in West Flanders.

The allies now found that no progress could be made in France while general Pichegru was advancing successfully and occupying West Flanders in their rear. The emperor, therefore, withdrew the greater part of his army to the neighbourhood of Tournay, and resolved to make a grand effort to cut off the communication between Courtray and Lisle, thus to prevent completely the retreat of Pichegru. On the night of the 16th, the army moved forwards in five columns for this purpose. Clairfait was at the same time directed to cross the Lys, to effect a general junction, if possible, and complete the plan. The attempt during that evening seemed to promise success; but, in the course of next day, the division under the duke of York was overpowered by numbers and defeated. The progress of the rest of the columns was stopped, and Clairfait completely defeated. In the confusion of the day, when attempting to rally the different parts of the division which he commanded, the duke of York was separated from his own troops by a party of the enemy's cavalry, and only escaped being made prisoner by the swiftness of his horse. The plan of the allies being thus frustrated, their army withdrew to the neighbourhood of Tournay.

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Pichegru speedily attempted to retaliate against the allies. On the 22d of May he brought down at day break his whole force against them. The attack was commenced by a heavy fire of artillery, and all the advanced posts were forced. The engagement soon became general; the attacks were repeatedly renewed on both sides; the whole day was spent in a succession of obstinate battles. All that military skill could do was performed on both sides. The French and the allied soldiers fought with equal courage and equal discipline. At nine o'clock in the evening the French at last reluctantly withdrew from the attack. The day on which a vanquished enemy flies from the field is not always that on which the victory is won. In this engagement the French were unsuccessful in their immediate object; but the weight of their fire, their steady discipline, and their violent obstinacy of attack, raised their military character high in the estimation of the officers and soldiers of the allied army. It was soon perceived, that in addition to these they possessed other advantages. Their numbers were immense; they implicitly obeyed their generals; who, being men newly raised from the rank of subalterns, as implicitly submitted to the directions of the committee of public safety. A combination of efforts was thus produced whose operation was not retarded by divided counsels. On the other side, the numbers of the allies were daily declining; their leaders were independent princes or powerful men, whose sentiments and interests were often very hostile to each other, and their exertions were consequently disunited.

On the 24th the French again crossed the Sambre, but were driven back with much loss. On the 27th an attempt was made to besiege Charleroi, but the prince of Orange on the 3d of June compelled them to raise the siege. On the 12th a similar atrempt was made, and they were again repulsed. In West Flanders, however, Pichegru was sufficiently strong to commence the siege of Ypres. He was soon attacked by general Clairfait for the purpose of relieving it, but without success.—Ypres was garrisoned by 7000 men; reinforcements were therefore daily sent from the grand army to Clairfait for the purpose of relieving it. It is unnecessary to mention the bloody contests in which that unfortunate general was daily engaged with the French; it is sufficient to say, that they were uniformly unsuccessful, and were the means of wasting, in a great degree, the armies of the allies. Ypres held out till the 17th of June, when it capitulated: and such was the discipline of the French army at this time, that no notice could be obtained, for several days, of that event. In consequence of it and of other events, the duke of York found it necessary to retreat to Oudenarde; for Jourdan, after storming the Austrian camp

195 He lays siege to Ypres, and

196 Takes it.

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of Peronne, now advanced with ſuch ſtrength upon Cambray, on the eaſt, that its immediate fall was fear-
197 Charleroi ſurrendered to the allies.
ed. As this would have enabled the two French armies to encircle the whole of Flanders, the prince of Cobourg advanced to its relief. Charleroi ſurrendered at diſcretion on the 25th. This circumſtance was not known to the prince of Cobourg when he advanced on the 26th to attack the intrenchments the army that covered the ſiege of Charleroi: but the covering army being ſo much reinforced by the acceſſion of the beſieging army, the allies were repulſed. Jourdan then drew his whole force out of their intrenchment; and, in his turn, attacked the Auſtrians. He was three times repulſed, but was at laſt ſucceſsful: the loſs of the vanquiſhed army is ſaid to have been prodigious; but no particular accounts of it have been publiſhed. The French unqueſtionably exaggerated their own ſucceſs, when they had that it amounted to 15,000 men.

198 Fruits of the victories of the French this campaign.

The allies now retreated in all quarters. Nieuport, Oſtend, and Bruges, were taken; and Tournay, Mons, Oudenarde, and Bruſſels, opened their gates. At this laſt place the French armies of Eaſt and Weſt Flanders united. Landrecies, Valenciennes, Condé, and Quеſnoy, were fruitleſsly left with garriſons in them. The allied troops, evacuating Namur, formed a line from Antwerp to Liege to protect the country behind. The French advanced in full force, and attacked general Clairfait, cut to pieces half of the troops that now remained under him, and broke the line. The allies retreated before them. The duke of York was joined by ſome troops under the earl of Moira that with much difficulty had made their way to him from Oſtend; and with theſe and the Dutch troops he retired to the neighbourhood of Bergen-op-zoom and Breda for the protection of Holland. The prince of Cobourg evacuated Liege, croſſed the Meuſe, and placed a garriſon in Maeſtricht. He ſoon, however, ſent back a part of his troops to the neighbourhood of Tongres; for here, to the aſtoniſhment of all Europe, the French armies made a voluntary pauſe in their career of victory, and ceaſed to purſue their retiring foes. Sluys in Dutch Flanders was the only foreign poſt that they continued to attack, and it ſurrendered after a ſiege of
199 Army of the Rhine.
21 days.

On the Rhine the war was equally ſucceſsful on the part of the French. On the 12th, 13th, and 14th of July, repeated engagements were fought; in which the French enjoyed their uſual ſucceſs. They had numerous armies in every quarter. Their mode of fighting was to make full preparation for accompliſhing their object, and to fight in great bodies day after day till it was attained. The Palatinate was thus over-run, and Treves taken, by general Michaud. Flanders and the Palatinate have always been accounted the granaries of Germany; and both of them, at the commencement of the harveſt, now fell into the hands of the French.

200 Corſica ſubdued by Great Britain.

During the courſe of this ſummer Corſica was ſubdued by Great Britain, and the whole of the French Weſt India Iſlands, excepting a part of Guadaloupe, yielded to the Britiſh troops under the command of Sir Charles Grey and Sir John Jervis. On the firſt of June the Britiſh fleet, under the command of Earl Howe, gained a moſt ſplendid victory over the French fleet to the weſtward of Ushant. The French committee of ſafety were known to have purchaſed in America immenſe quantities of grain and other ſtores. Theſe were embarked on board 160 ſail of merchantmen, conveyed by ſix ſail of the line. Lord Howe failed to intercept this valuable convoy. The French fleet failed at the ſame time to protect it. On the morning of the 28th of May the fleets came in ſight of each other. The Britiſh admiral had previouſly diſpatched ſix ſhips of the line under admiral Montague to intercept the French convoy, while he ſhould engage and detain the grand fleet. The French diſpatched eight ſail to defeat this attempt. In the courſe of the 29th Lord Howe got to windward of the French fleet. His force was 25, and theirs was 26, ſail of the line. The following day he bore down upon them, and broke their line. The engagement was one of the ſevereſt ever fought. The French admiral, in leſs than an hour after the cloſe action commenced in the centre, crouded off with 12 of his ſhips. The Britiſh fleet was ſo much diſabled, or ſeparated, that ſeveral of the French diſmantled ſhips got away under ſails raiſed on the ſtump of their fore-maſts. Seven ſail of the line, however, remained in poſſeſſion of the Britiſh, and two were unqueſtionably ſunk. In the mean time, admiral Montague fell in with the French convoy, but it was now guarded by 14 ſail of the line. As he could not encounter ſuch a force, he returned home, and it was ſafely conveyed into port. Thus, by one of thoſe contradictions which ſo often occur in human affairs, the Britiſh fleet was victorious, and the French were left in ſome meaſure maſters of the ſea. As this engagement however teſtified that the Britiſh ſeamen had not loſt their ancient ſuperiority on their own element, the nation regarded the preſent victory as a pledge of its independence, and very general rejoicings took place in conſequence of it.

French Revolution 1794.

201 Splendid victory of the Britiſh fleet under Lord Howe.

202 The horrid executions in Paris continued.

In the mean time, the revolutionary ſyſtem of government in the hands of committees of the convention at Paris, and of committees of the popular ſocieties throughout the country, was arrived at its higheſt perfection, and proceeded without oppoſition in its ſevere and ſanguinary meaſures.

On the 10th of May Madame Elizabeth, ſiſter of the late king, was ſacrificed by it in conſequence of a decree of the revolutionary tribunal. Multitudes of others of every rank and ſex were daily ſacrificed in a ſimilar manner; the rich in particular were the great objects of perſecution, becauſe the confiſcation of their property added to the ſtrength of the ruling powers. But neither were the poor ſafe from the bloody vigilance of this new and ſingular government. By the different executions Robeſpierre had contrived to deſtroy every avowed rival. All the conſtituted authorities conſiſted wholly of perſons nominated with his approbation; and as the committees which conducted the buſineſs of the ſtate were at his diſpoſal, his will was irreſiſtible throughout the republic. He met with no oppoſition in the convention; for that body was no longer the turbulent popular aſſembly which it had once appeared; it was little more than a name employed to give ſome ſort of reſpectability to ſuch ſchemes as were propoſed to it.

203 Immenſe power of Robeſpierre

Amidſt this accumulation, however, of ſeemingly irreſiſtible authority, Robeſpierre was at the brink of ruin. The whole of the old Girondiſt party was indeed ſubdued and ſilent; but many members of the convention ſtill remained attached to it. The party of the Mountain,

204 Verging to ruin.

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Mountain, by means of whom Robeſpierre had riſen to power, with little ſatisfaction now found themſelves not only diſregarded, but ready at every inſtant to fall a ſacrifice to that ſyſtem of terror which they had contributed to erect. Even the Jacobins themſelves, though neither timid nor cautious in the ſhedding of blood, began to murmur when they ſaw that awful privilege confined excluſively within a few hands, or rather monopolized by an individual. In this ſtate things remained for ſome time; and it appeared how poſſible it is for an individual to govern a great nation even while the whole of that nation is hoſtile to his power. The baniſhment or impriſonment of all foreigners, which had long been rigorouſly practiſed, prevents us from poſſeſſing much accurate information concerning the internal ſtate of France at this period; but it is certain, that one circumſtance in particular tended much to accelerate the fall of Robeſpierre. He had procured a decree to be paſſed, authoriſing the committee of public ſafety to impriſon at its pleaſure, and bring to trial, any member of the convention. All the individuals of that body found themſelves placed by this decree in the hands of a man whoſe ſevere and ſuſpicious temper they well knew. Still, however, they were ſo much ſurrounded by ſpies, that it was difficult to form a party or plan of operations; even the majority of the committee of public ſafety were among the number of the diſcontented, but they dared not to withſtand their chief. At laſt, on the 25th of July, the convention began to exhibit ſigns of agitation. It was underſtood, that in the courſe of a few days Robeſpierre would ſacrifice a number of the members to his ſuſpicions. On the following day the ſitting of the convention was ſtill more tempeſtuous. In a long ſpeech Robeſpierre defended his own conduct againſt thoſe who had reproached him with aſpiring to the dictatorſhip of France. He attacked the party whom he ſtyled *Moderates*, as wiſhing to overturn the revolutionary government, and to reſtore the feeble ſyſtem of the Briſſotines. The reſult of a long debate was, that Robeſpierre was apparently victorious, and his ſpeech was ordered to be printed. On the 27th the convention appeared ripe for a change: St Juſt, a member of the committee of public ſafety, in attempting to defend Robeſpierre, was repeatedly interrupted; and Billaud Varrennes ſtood forward and enumerated the crimes, and proclaimed the tyranny, of Robeſpierre. The ſpeech was received with burſts of applauſe. Robeſpierre in vain attempted to defend himſelf; he was ſilenced by ſhouts of execration from every part of the hall. Tallien ſeconded the former ſpeaker in his accuſation. The ſitting was declared permanent, and a decree of arreſt was paſſed againſt Robeſpierre and a younger brother of his, along with St Juſt, Couthon, and Lebas. Theſe men left the convention, and found ſecurity in the hall of the commune of Paris; where the municipal officers agreed to protect and ſtand by them. The toſin was ſounded; the armed force was under their command; an inſurrection was therefore attempted againſt the convention: but the ſections of Paris refuſed their ſupport. Very few of the troops could be collected, and theſe were not firm; the late tyranny had become odious. The hall of the commune was therefore ſpeedily ſurrounded; and about three o'clock in the morning of the 28th Robeſpierre and his aſſociates were made priſoners. They had been outlawed by the convention on account of their reſiſtance. They were not therefore tried, unleſs for the purpoſe of identifying their perſons; and, in the courſe of that day, they were executed: 60 of the municipal officers were alſo executed for joining in their rebellion; and in this way a ſtorm paſſed over, which at one time threatened to involve the French capital in ruin, and filled all Europe with aſtoniſhment. Thus alſo terminated the career of the moſt extraordinary man that the French revolution had brought forward. His talents were undoubtedly conſiderable, and his ambition knew no bounds, bidding defiance to the ordinary feelings of humanity. Had Dumourier poſſeſſed his coolneſs and caution, or had he poſſeſſed the military talents of Dumourier, the convention would certainly have been overturned, and we ſhould have ſeen a ſecond Cromwell on the throne of his murdered ſovereign.

205 Particulars of his fall.

206 The ſyſtem of terror gives place to that of moderatiſm,

After the fall of Robeſpierre, the convention exhibited no ſmall change of appearance. Inſtead of that ſilence which formerly prevailed, all was buſtle and noiſe; all accuſed each other. There was no longer any leader, and there was no formed party. The former ſyſtem of terror was declared to be at an end, and a new ſyſtem of *moderatiſm* ſucceeded. This was carried to as great a height as the ſyſtem of terror had formerly been; and all means were taken to render popular the fall of their late tyrant. The committees were organiſed anew, and their members ordered to be frequently changed. The correſpondence between the affiliated Jacobin clubs was prohibited, and at laſt the Jacobin club itſelf was aboliſhed. This laſt event was accompliſhed with eaſe; and that ſociety which had been the great engine of the revolution, was itſelf without reſiſtance overturned. Seventy-one deputies of the Girondiſt party, who had been impriſoned ſince the 31ſt of May 1793, were ſet at liberty. The name of Lyons was reſtored to it. Some of the agents of Robeſpierre were puniſhed, particularly the infamous Carrier, whoſe cruelties in La Vendée we formerly mentioned. Still, however, the convention appeared ſo little united and ſo little decided with regard to objects of the firſt importance, that in all probability they would not have conducted the important ſtruggle againſt the nations of Europe with more ſucceſs than the Girondiſt party had formerly done, if the revolutionary government and the late ſyſtem of terror had not already accumulated in their hands ſuch vaſt reſources, and traced out ſuch a plan of procedure, as rendered it an eaſy matter to preſerve their numerous armies in the train of ſucceſs to which they were now habituated.

207 The French towns ſtrongly garriſoned by the allies ſurrender without reſiſtance,

The allies in their retreat had left ſtrong garriſons in the French towns which had ſurrendered to them. Theſe were Condé, Valenciennes, Queſnoi, and Landrecies. They now ſurrendered to the republican armies with ſo little reſiſtance, that the conduct of the emperor began to be conſidered as ambiguous, and he was ſuſpected of having entered into ſome kind of compromiſe with the French. This idea proved erroneous; and as ſoon as the army which had beſieged theſe towns was able to join the grand army under Pichegru and Jourdan, the operations of the campaign were reſumed after a ſuſpenſion of almoſt two months. The French army divided itſelf into two bodies. One of theſe under Jourdan advanced againſt General Clairfait, who had ſucceeded the prince of Cobourg in the command

in

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in the neighbourhood of Maeſtricht. On the 15th of September the French attacked the whole Auſtrian poſts in an extent of five leagues from Liege to Maeſtricht. On that and the following day the loſs was nearly equal. On the 17th the French with 50 pieces of cannon attacked General Kray in his entrenched camp before Maeſtricht. M. de Kray was already retiring when General Clairfait arrived with a ſtrong reinforcement, and after ſeveral combat the French were once more compelled to retire. On the 18th the French renewed the attack with tenfold fury upon every part of the Auſtrian line, and the whole was compelled to fly to the neighbourhood of Aix-la-Chapelle. General Clairfait now chose a ſtrong poſition on the banks of the Roer, where he even declared it to be his wiſh that he might be attacked. But by this time the ſpirit of his army was humbled, deſertions became numerous, and the want of diſcipline was extreme. On the 1ſt of October the French croſſed the Maeſe and the Roer, and attacked the whole Auſtrian poſts from Ruremond down to Juliers. After a bloody engagement, the brave and active, though unfortunate, General Clairfait was compelled haſtily to croſs the Rhine, with the loſs of 10 or 12,000 men. The French general did not attempt to croſs that river, but one detachment of his army took poſſeſſion of Coblentz, while others laid cloſe ſiege to Venlo and Maeſtricht, which ſoon ſurrendered.

208 Further ſucceſſes of the French,

209 And their progreſs in the conqueſt of Holland.

The diviſion of the French army, in the mean time, under General Pichegru came down upon Holland, and attacked the allied army under the duke of York between Bois-le-duc and Grave. They forced the advanced poſt of Boxtel. Lieutenant-general Abercromby was ſent to attempt to recover this poſt on the fifteenth of September, but he found the French in ſuch force that he was obliged to retreat. Indeed the French were diſcovered to be no leſs than 80,000 ſtrong in that neighbourhood. The duke of York was unable to contend againſt a force ſo ſuperior, and retired acroſs the Maeſe with the loſs of ſomewhat leſs than 1500 men. Pichegru immediately laid ſiege to Bois-le-duc. On the 30th of September, Crevecœur was taken, and Bois-le-duc ſurrendered in 10 days thereafter. In it 408 French emigrants were taken priſoners; and theſe, as well as 700 that had been taken at Nieuport, 500 at Sluys, and 1100 at Valenciennes, were all put to death, agreeably to the rigorous law formerly made by the convention. The French now followed the duke of York acroſs the Maeſe. Upon this the greater part of the allied army under his royal highneſs croſſed the Rhine and took poſt at Arnheim. The remaining part of the army followed ſoon after, and Nimeguen was occupied by the French on the 7th of November. The duke of Brunſwick was at this time requeſted to take the command of the allied army, to protect Holland, if poſſible. He came to Arnheim for that purpoſe; but after examining the ſtate of things there, he declined the undertaking. The allied troops had now ſo often fled before their victorious and almoſt innumerable enemies, they had ſo often been in want of every neceſſary, and had been received ſo ill by the inhabitants of the countries through which they paſſed, among whom the French cauſe was extremely popular, that they had loſt that regularity of conduct and diſcipline which alone can afford a ſecure proſpect of ſucceſs in military affairs.

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210 Conduct, diſcipline, and ſtate of the French armies.

The French, on the contrary, well received, abounding in every thing, and proud of fighting in a popular cauſe, now acted with more order, and ſubmitted to the ſtricteſt diſcipline. In addition to all theſe advantages, the French leaders had the dexterity to perſuade the world that new and unknown arts were employed to give aid to their cauſe. At this period the *telegraphe* was firſt uſed for conveying intelligence from the frontiers to the capital, and from the capital to the frontiers. (See TELEGRAPHE). Balloons were alſo uſed by the French during this campaign to procure knowledge of the poſition of the enemy. An engineer aſcended with the balloon, which was ſuffered to riſe to a great height, but prevented from flying away by a long cord. He made plans of the enemy's encampment; and during an attack he ſent down notice of every hoſtile movement. In the affairs of men, and more eſpecially in military tranſactions, opinion is of more importance than reality. The French ſoldiers confided in their own officers as men poſſeſſed of a kind of omniſcience, while the allied troops, no doubt, beheld with anxiety a new contrivance employed againſt them, whoſe importance would be readily magnified by credulity and ignorance. With all theſe advantages, however, after the capture of Nimeguen, they once more made a halt in their career, and abſtained from the attack of Holland, which now ſeemed almoſt proſtrate before them.

211 Their ſucceſſes in Spain.

While theſe events occurred in the north, the French arms were ſcarcely leſs ſucceſsful on the ſide of Spain. Bellegarde was taken; in the Weſtern Pyrenees, Fontarabia ſurrendered, and alſo St Sebaſtian; the whole kingdom of Spain ſeemed panic ſtruck. That feeble government, with an almoſt impregnable frontier, and the moſt powerful fortreſſes, could make little reſiſtance; and the difficult nature of their country was their only protection. The hiſtory of this war is only a hiſtory of victories on the part of the French. In the Eaſtern Pyrenees, on the 17th of November, the French general Dugommier was killed in an engagement, in which his army was ſucceſsful. On the 20th of that month the French again attacked the Spaniards, and routed them by means of the bayonet, without firing a ſingle muſket-ſhot. Tents, baggage, and cannon, for an army of 50,000 men, fell into the hand of the conquerors, along with a great part of the province of Navarre. Towards the end of the year, an army of 40,000 Spaniards, entrenched behind 80 redoubts, the labour of ſix months, ſuffered themſelves to be completely routed; their general count de La Union was found dead on the field of battle, and the whole Spaniſh artillery was taken. In three days thereafter, the fort Fernando de Figueres, containing a garriſon of 9107 men, ſurrendered, although it mounted 171 pieces of cannon, and poſſeſſed abundance of proviſions. The French continued their conqueſts; Roſas was taken, and the whole province of Catalonia was left at the mercy of the invaders.

212 The conqueſt of Holland completed.

The ſucceſſes of this wonderful campaign were not yet terminated; and the laſt part of them is perhaps the moſt important, although no great effort was neceſſary to its execution. The winter now ſet in with uncommon ſeverity. For ſome years paſt the ſeaſons of Europe had been uncommonly mild; there had been little froſt in winter, and no intenſe heat in ſummer. But during the late ſeaſon the weather had long been remarkably

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markably dry till the latter part of harveſt, when there fell a conſiderable, though by no means unuſual, quantity of rain. Towards the end of December a ſevere froſt bound up the whole of the rivers and lakes of Holland. The Waal was frozen over in the beginning of January; a circumſtance which had not occurred for 14 years paſt. Taking advantage of this, the French croſſed that river, and with little oppoſition ſeized the important paſs of Bommell, which at other ſeaſons is ſo ſtrong by its inudations. The allied army had been joined by 17,000 Auſtrians, and had received orders to defend Holland to the laſt. They did ſo, and were ſucceſsful in repulſing the French for ſome days between the Waal and the Leck; but the republican army, amounting to 70,000 men, having at laſt advanced in full force, the allied troops were compelled to retire acroſs the Yſſel into Weſtphalia. In the courſe of their march through this deſert country, in the midſt of ſevere froſt and a deep ſnow, they are ſaid to have ſuffered incredible hardſhips, and to have loſt a very great number of men. The French, in the mean time, advanced rapidly acroſs the country to the Zuyder ſea, to prevent the inhabitants from flying, and carrying off their property. On the 16th of January 1795, a party of horſe, without reſiſtance, took poſſeſſion of Amſterdam. The other towns ſurrendered at diſcretion. In conſequence of an order from the States General, the ſtrong fortreſſes of Bergen-op-zoom, Williamſtadt, Breda, &c, opened their gates to the French. The fleet and the ſhipping were fixed by the intenſe froſt in their ſtations, and fell a prey to the enemy; who thus, with little effort, made a complete conqueſt of this populous and once powerful country. The French were well received by the people at large. The power of the Stadtholder had been ſupported among them merely by the influence of Pruſſia and England. Through hatred to this office, which had now become odious chiefly to the mercantile ariſtocracy of Holland, they were little attached to their allies, and gave them, during the preſent war, as little ſupport as poſſible. The Stadtholder and his family now fled to England. The French declared, that they did not mean to make ſubjects but allies of the Dutch, and invited them to call together popular aſſemblies for ſettling their own government, under the protection of the French republic.

Thus terminated a campaign, the moſt aſtoniſhing perhaps, that has been known in the hiſtory of mankind. In the courſe of it, even before the conqueſt of Holland, the French had taken 2000 pieces of cannon and 60,000 priſoners. After that event, the conquered territories added to them a population of nearly 14 millions of people. Luxembourg and Mentz were the only places on this ſide of the Rhine that reſiſted them. The former was cloſely blockaded, for the purpoſe of compelling it to ſurrender; the latter was ſeveral times aſſaulted, but ſucceſsfully held out.

213 The diet of Ratiſbon wiſh for peace.

Europe was now weary of this bloody ſtrife. The German Diet of Ratiſbon declared its reſolution to take meaſures for procuring peace. The Grand Duke of Tuſcany concluded a treaty with the French republic. France itſelf, exhauſted by maſſacres, emigrations and the terrible efforts which it had made, wiſhed for tranquillity; and the Convention found it neceſſary to declare that they were willing to treat for peace with any of the powers of Europe, upon honourable terms.

French Revolution 1795.

The frequent changes, however, which have with aſtoniſhing rapidity taken place in the mode of conducting French affairs, and the different principles diſplayed by the different factions as they ſucceſſively got into power, had produced in Great Britain and Auſtria a very general perſuaſion that no peace concluded with the preſent Convention could either be honourable or permanent; and therefore theſe two mighty nations have reſolved to continue the war with redoubled vigour.— In ſupport of the wiſdom of this reſolution, it has been obſerved, that the hatred of the Mountain to the Girondiſts was ſuch, that it would have violated any treaty which had been concluded with them; that when Robeſpierre became all powerful, and terror was the order of the day, all former meaſures were changed, and peace or war made wholly ſubſervient to the ambitious views of that relentleſs tyrant; that Tallien, having originally belonged to the Mountain, introduced the preſent ſyſtem of moderation, not from principle, but only to reconcile the people to his uſurped authority, and the fall of his bloody predeceſſor; that he may ſuddenly change his meaſures, or be denounced and executed by the influence of ſome more daring demagogue, who would again introduce the ſyſtem of terror; and that in ſuch a ſtate of uncertainty, the only conſequence to be expected from making peace at preſent is, that it would furniſh the next faction which may gain the aſcendancy in France with an opportunity of attacking the allies when leſs prepared to receive them. Such reaſoning as this has been admitted in the Britiſh parliament, where a loan of ſix millions Sterling has been voted to the Emperor, to enable him to begin the enſuing campaign with an army of 200,000 men. In what manner the war ought to be conducted, it is not for us to ſay. The Britiſh nation ſeems to reſt its hopes on its ſuperiority at ſea; and the greateſt exertions are making to augment and man the navy. But we are here under the neceſſity of dropping this ſubject, without being able completely to fulfil the promiſe which we made to our readers at the end of the article France. There is as little appearance at preſent of peace, and a ſteady government being ſoon reſtored to that diſtracted country, as there was at the beginning of the troubles; and there is not the ſmalleſt probability that the republican conſtitution, framed by the Convention, will laſt one year after the diſſolution of that aſſembly.

214 Britain and Auſtria determine on a vigorous proſecution of the war.

215 Concluſion.

In tracing the origin and progreſs of this wonderful revolution, we have conſulted every work from which we had reaſon to look for information, and we have confined ourſelves to a ſimple narration of facts, ſeldom giving way to the reflections which they ſuggeſted. Our facts, too, have been generally ſtated from writers who are ſuppoſed to be not unfriendly to democracy, that they may gain the fuller credit with other reformers; for in the moſt favourable point of view in which thoſe facts can be placed, they furniſh ſtrong objections to precipitate innovations in moderate governments. If the horrible deeds of darkneſs which have been acted on the theatre of France cannot make us contented with the government under which we live, and which has been brought to its preſent ſtate of perfection, not by the metaphyſical ſpeculations of recluſe philoſophers, but by obſervation and the practical experience of other nations we ſhall be conſidered by poſterity as a people

Revulſion
Reynolds.

people incapable of inſtruction, and ripe for the greateſt miſcreants in which we may be involved.

REVULSION, in medicine, turning a flux of humours from one part to another by bleeding, cupping, friction, ſinapiſms, bliſters, fomentations, bathings, iſſues, ſetons, ſtrong purging of the bowels, &c.

REYN (Jan de), an eminent hiſtory and portrait painter, born at Dordrecht in 1610. He had the good fortune to be a diſciple of Vandyke, who was the firſt performer in his ſchool, and was ſo attached to his maſter that he followed him to London, where it is thought he continued as long as he lived. In thoſe kingdoms he is moſtly known by the name of *Lazy Jan*. He died in 1678: and it is imagined that the ſcarcity of his works is occaſioned by ſo many of them being imputed to Vandyke; a circumſtance which, if true, is beyond any thing that could be ſaid in his praiſe.

REYNOLDS (Sir Joſhua), the celebrated painter, was, on July the 16th, 1723, born at Plimpton, a ſmall town in Devonſhire. His father was miniſter of the pariſh, and alſo maſter of the grammar ſchool; and being a man of learning and philanthropy, he was beloved and reſpected by all to whom he was known.—Such a man, it will naturally be ſuppoſed, was aſſiduous in the cultivation of the minds of his children, among whom his ſon Joſhua ſhone conſpicuous, by diſplaying at a very early period a ſuperiority of genius, and the rudiments of a correct taſte. Unlike other boys, who generally content themſelves with giving a literal explanation of their author, regardleſs of his beauties or his faults, young Reynolds attended to both theſe, diſplaying a happy knowledge of what he read, and entering with ardour into the ſpirit of his author. He diſcovered likewiſe talents for compoſition, and a natural propenſity to drawing, in which his friends and intimates thought him qualified to excel. Emulation was a diſtinguiſhing feature in his mind, which his father perceived with the delight natural to a parent; and deſigning him for the church, in which he hoped that his talents might raiſe him to eminence, he ſent him to one of the univerſities.

Soon after this period he grew paſſionately fond of painting; and, by the peruſal of Richardſon's theory of that art, was determined to make it his profeſſion through life. At his own earneſt requeſt, therefore, he was removed to London; and about the year 1733 became a pupil to Mr Hudſon, who, though not himſelf an eminent painter was preceptor to ſeveral who afterwards excelled in the art. One of the firſt advices which he gave to Mr Reynolds was to copy carefully Guercino's drawings. This was done with ſuch ſkill, that many of the copies are ſaid to be now preſerved in the cabinets of the curious as the originals of that very great maſter. Reynolds.

About the year 1749, Mr Reynolds went to Italy under the auſpices, and in the company, of the late Lord (then Commodore) Keppel, who was appointed to the command of the Britiſh ſquadron in the Mediterranean. In this garden of the world, this magic ſeat of the arts, he failed not to viſit the ſchools of the great maſters, to ſtudy the productions of different ages, and to contemplate with unwearied attention the various beauties which are characteriſtic of each. His labour here, as has been obſerved of another painter, was "the labour of love, not the taſk of the hireling;" and how much he profited by it is known to all Europe.

Having remained about two years in Italy, and ſtudied the language as well as the arts of the country with great ſucceſs, he returned to England, improved by travel and refined by education. On the road to London from the port where he landed, he accidentally found in the inn where he lodged Johnſon's life of Savage; and was ſo taken with the charms of compoſition, and the maſterly delineation of character diſplayed in that performance, that having begun to read it while leaning with his arm on the chimney-piece, he continued in that attitude inſenſible of pain till he was hardly able to raiſe his hand to his head. The admiration of the work naturally led him to ſeek the acquaintance of its author, who continued one of his ſincereſt admirers and warmeſt friends, till 1784, when they were ſeparated by the ſtroke of death.

The firſt thing that diſtinguiſhed him after his return to his native country, was a full length portrait of Commodore Keppel; which in the polite circles was ſpoken of in terms of the higheſt encomium, and teſtified to what a degree of eminence he had arrived in his profeſſion. This was followed by a portrait of Lord Edgecombe, and a few others, which at once introduced him to the firſt buſineſs in portrait painting; and that branch of the art he cultivated with ſuch ſucceſs as will for ever eſtabliſh his fame with all deſcriptions of refined ſociety. Having painted ſome of the firſt-rate beauties of the age, the polite world flocked to ſee the graces and the charms of his pencil; and he ſoon became the moſt faſhionable painter, not only in England, but in all Europe. He has indeed preſerved the reſemblance of ſo many illuſtrious characters, that we feel the leſs regret for his having left behind him ſo few hiſtorical paintings; though what he has done in that way ſhows (A) him to have been qualified to excel in both departments. The only landſcape, perhaps, which he

(A) As the lovers of painting may wiſh to have a catalogue of this great maſter's hiſtorical pieces, we ſubjoin the following from the European Magazine, which we have good reaſon to believe accurate, as the editors of that miſcellany grudge neither trouble nor expence to procure authentic information. Sir Joſhua's principal hiſtorical pieces, then, are the following: Hope nurſing Love; Venus chaſtiſing Cupid for having learned to caſt accounts; Count Ugolino in the dungeon; the calling of Samuel; Ariadne; a Captain of banditti; Beggar Boy; a Lady in the character of St Agnes; Thais; Dionyſius the Areopagite; an infant Jupiter; Mother Crewe in the character of Henry VIII; the death of Dido; a Child aſleep; Cupid ſleeping; Covent Garden Cupid; Cupid in the Clouds; Cupids painting; Boy laughing; Maſter Hebert in the character of Bacchus; Hebe; Miſs Meyer in the character of Hebe; Madona, a head; the Black-guard Mercury; a little boy (Samuel) praying; and old Man reading; Love locking the zone of Beauty; the Children in the Wood; Cleopatra

Reynolds. he ever painted, except thoſe beautiful and chaſte ones which compoſe the back grounds of many of his portraits, is "A View on the Thames from Richmond," which in 1784 was exhibited by the Society for Promoting Painting and Deſign in Liverpool.

In 1764 Mr Reynolds had the merit of being the firſt promoter of that club, which, having long exiſted without a name, became at laſt diſtinguiſhed by the appellation of the *Literary Club*. Upon the foundation of the Royal Academy of Painting, Sculpture, and Architecture, he was appointed preſident; and his acknowledged excellence in his profeſſion made the appointment acceptable to all the lovers of art. To add to the dignity of this new inſtitution, his majeſty conferred on the preſident the honour of knighthood; and Sir Joſhua delivered his firſt diſcourſe at the opening of the Academy on January 2. 1769. The merit of that diſcourſe has been univerſally admitted among painters; but it contains ſome directions reſpecting the proper mode of proſecuting their ſtudies, to which every ſtudent of every art would do well to pay attention. "I would chiefly recommend (ſays he), that an implicit obedience to the *rules of art*, as eſtabliſhed by the practice of the great maſters, ſhould be exacted from the young ſtudents. That thoſe models, which have paſſed through the approbation of ages, ſhould be conſidered by them as perfect and infallible guides; as ſubjects for their imitation, not their criticiſm. I am confident, that this is the only efficacious method of making a progreſs in the arts; and that he who ſets out with doubting, will find life finiſhed before he becomes maſter of the rudiments. For it may be laid down as a maxim, that he who begins by preſuming on his own ſenſe, has ended his ſtudies as ſoon as he has commenced them. Every opportunity, therefore, ſhould be taken to diſcountenance that falſe and vulgar opinion, that rules are the fetters of genius. They are fetters only to men of no genius; as that armour which, upon the ſtrong, becomes an ornament and a defence, upon the weak and miſhapen turns into a load, and cripples the body which it was made to protect."

Each ſucceeding year, on the diſtribution of the prizes, Sir Joſhua delivered to the ſtudents a diſcourſe of equal merit with this: and perhaps we do not hazard too much when we ſay, that, from the whole collected, the lover of belles lettres and the fine arts will acquire juſter notions of what is meant by taſte in general, and better rules for acquiring a correct taſte, than from multitudes of thoſe volumes which have been profeſſedly written on the ſubject.

In the autumn of 1785 he went to Bruſſels, where he expended about L. 1000 on the purchaſe of paintings, which, having been taken from the different monaſteries and religious houſes in Flanders and Germany, were then expoſed to ſale by the command of the Emperor Joſeph! Gainſborough and he had engaged to paint each other's portrait; and the canvas for both being actually ſtretched, Sir Joſhua gave one ſitting to his diſtinguiſhed rival; but, to the regret of every admirer of the art, the unexpected death of the latter prevented all further progreſs. Reynolds.

In 1790 he was anxiouſly deſirous to procure the vacant profeſſorſhip of perſpective in the academy for Mr Bonomi, an Italian architect; but that artiſt not having been yet elected an aſſociate, was of courſe no academician, and it became neceſſary to raiſe him to thoſe ſituations, in order to qualify him for being a profeſſor. Mr Gilpin being his competitor for the aſſociateſhip, the numbers on the ballot proved equal, when the preſident by his caſting vote decided the election in favour of his friend, who was thereby advanced ſo far towards the profeſſorſhip. Soon after this, an academic ſeat being vacant, Sir Joſhua exerted all his influence to obtain it for Mr Bonomi; but finding himſelf outvoted by a majority of two to one, he quitted the chair with great diſſatisfaction, and next day ſent to the ſecretary of the academy a formal reſignation of the office, which for twenty-one years he had filled with honour to himſelf and his country. His indignation, however, ſubſiding, he ſuffered himſelf to be prevailed upon to return to the chair, which within a year and a half he was again deſirous to quit for a better reaſon.

Finding a diſeaſe of languor, occaſioned by an enlargement of the liver, to which he had for ſome time been ſubject, increaſe upon him, and daily expecting the total loſs of ſight, he wrote a letter to the academy, intimating his intention to reſign the office of preſident on account of bodily infirmities, which diſabled him from executing the duties of it to his own ſatisfaction. The academicians received this intelligence with the reſpectful concern due to the talents and virtues of their preſident; and either then did enter, or deſigned to enter, into a reſolution, honourable to all parties, namely, that a deputation from the whole body of the academy ſhould wait upon him, and inform him of their wiſh, that the authority and privileges of the office of preſident might be his during his life; declaring their willingneſs to permit the performance of any of its duties which might be irkſome to him by a deputy.

From this period Sir Joſhua never painted more. The laſt effort of his pencil was the portrait of the Honourable Charles James Fox, which was executed in his

patra diſſolving the pearl; Garrick in the character of Kitely; Garrick between Tragedy and Comedy; Mrs Abingdon in the character of Comedy; a Child ſurrounded by Guardian Angels; Miſs Beauclerc in the character of Spenſer's Una; Reſignation; the Ducheſs of Manchester in the character of Diana; Lady Blake in the character of Juno; Mrs Sheridan in the character of St Cecilia; Edwin, from Beattie's Minſtrel; the Nativity, Four Cardinal Virtues, and Faith, Hope, and Charity, for the window of New College Chapel, Oxford; the Studious Boy; a Bacchante; a daughter of Lord W. Gordon as an Angel; the Holy Family; the Cottagers, from Thomſon; the Veſtal; the Careful Shepherdeſs; a Gypſey telling Fortunes; the infant Hercules ſtrangling the Serpent; the Mouſe-trap girl; Venus; Cornelia and her Children; the Bird; Melancholy; Mrs Siddons in Tragedy; Head of Lear; Mrs Talmaſh in the character of Miranda, with Proſpero and Caliban; Robin Goodfellow; Death of Cardinal Beaufort; Macbeth, with the Caldron of the Witches.

Reynolds. best ſtyle, and ſhews that his fancy, his imagination, and his other great powers in the art which he profeſſed, remained unabated to the end of his life. When the laſt touches were given to this picture,

"The hand of Reynolds fell, to riſe no more."

On the 23d February the 23d 1792, the world was deprived of this amiable man and excellent artiſt at the age of 69 years; a man than whom no one, according to Johnſon, had paſſed through life with more obſervation of human manners. The following character of him is ſaid to be the production of Mr Burke:

"His illneſs was long, but borne with a mild and equal fortitude, without the leaſt mixture of any thing irritable or querulous, agreeably to the placid and even tenor of his whole life. He had from the beginning of his malady a diſtinct view of his diſſolution, which he contemplated with that entire compoſure which nothing but the innocence, integrity, and virtuous courſe of his life, and an unaffected ſubmiſſion to the will of Providence, could beſtow. In this ſituation he had every conſolation from family tenderneſs, which his tenderneſs to his family had always merited.

"Sir Joſhua Reynolds was, on very many accounts, one of the moſt memorable men of his time: He was the firſt Engliſhman who added the praiſe of the elegant arts to the other glories of his country. In taſte, in grace, in facility, in happy invention, and in the richneſs and harmony of colouring, he was equal to the great maſters of the renowned ages. In portrait he went beyond them; for he communicated to that deſcription of the art in which Engliſh artiſts are the moſt engaged, a variety, a fancy, and a dignity, derived from the higher branches, which even thoſe who profeſſed them in a ſuperior manner did not always preſerve when they delineated individual nature. His portraits remind the ſpectator of the invention of hiſtory and the amenity of landſcape. In painting portraits, he appears not to be raiſed upon that platform, but to deſcend to it from a higher ſphere. His paintings illuſtrate his leſſons, and his leſſons ſeem to be derived from his paintings.

"He poſſeſſed the theory as perfectly as the practice of his art. To be ſuch a painter, he was a profound and penetrating philoſopher.

"In full happineſs of foreign and domeſtic fame, admired by the expert in art, and by the learned in ſcience, courted by the great, careſſed by ſovereign powers, and celebrated by diſtinguiſhed poets, his native humility, modeſty, and candour, never forſook him, even on ſurpriſe or provocation; nor was the leaſt degree of arrogance or aſſumption viſible to the moſt ſcrutinizing eye in any part of his conduct or diſcourſe.

"His talents of every kind—powerful from nature, and not meanly cultivated in letters—his ſocial virtues in all the relations and all the habitudes of life, rendered him the centre of a very great and unparalleled variety of agreeable ſocieties, which will be diſſipated by his death. He had too much merit not to excite ſome jealouſy, too much innocence to provoke any enmity. The loſs of no man of his time can be felt with more ſincere, general, and unmixed ſorrow."

REZAN, or REZANSKOI, an ancient town of Ruſſia, and capital of a duchy of the ſame name, with an archbiſhop's ſee. It was formerly conſiderable for its extent and riches; but it was almoſt ruined by the Tartars in 1568. The country is populous, and was formerly governed by its own princes. E. Long. 42. 30. N. Lat. 54. 54.

Rezan Rhama.

RHADAMANTHUS, a ſevere judge, and king of Lydia; the poets make him one of the three judges of hell.

RHAGADES, in medicine, denotes chaps or cleſts in any part of the body. If ſeated in the anus, and recent, the patient muſt ſit ſtill, and ſit over the ſteam of warm water. The epulotic cerate may alſo be applied. If the lips of theſe fiſſures are callous, they muſt be cut or otherwiſe treated as to become new ulcerations.

RHAMA, or RAMA, an incarnate deity of the firſt rank, in Indian mythology. Sir William Jones believes he was the Dionyſos (a) of the Greeks, whom they named *Bromius*, without knowing why; and *Bugenes*, when they repreſented him *horned*, as well as *Lyaios* and *Eleutherios* the deliverer, and *Triambos* or *Dythyrambos* the triumphant. "Moſt of thoſe titles (ſays Sir William) were adopted by the Romans, by whom he was called *Bruma*, *Tauriformis*, *Liber*, and *Triumphus*; and both nations had records or traditionary accounts of his giving laws to men and deciding their conteſts, of his improving navigation and commerce, and, what may appear yet more obſervable, of his conquering India and other countries with an army of ſatyrs, commanded by no leſs a perſonage than Pan; whom Lilius Giraldus, on what authority I know not, aſſerts to have reſided in Iberia 'when he had returned, ſays the learned mythologiſt, from the Indian war, in which he accompanied Bacchus.' It were ſuperfluous in a mere eſſay to run any length in the parallel between this European god and the ſovereign of Ayodhya, whom the Hindoos believe to have been an appearance on earth of the preſerving power; to have been a conqueror of the higheſt renown, and the deliverer of nations from tyrants, as well as of his conſort Sita from the giant Ravan king of Lanca; and to have commanded in chief a numerous and intrepid race of thoſe large monkeys, which our naturaliſts, or ſome of them, have denominated Indian ſatyrs: his general, the prince of ſatyrs, was named *Hanumat*, or "with high cheek bones;" and, with workmen of ſuch agility, he ſoon raiſed a bridge of rocks over the ſea, part of which, ſay the Hindoos, yet remain; and it is probable the ſeries of rocks to which the Muſſulmans or the Portugueſe have given the fooliſh name of *Adam's* (it ſhould be called *Rama's*) bridge. Might not this army

Aſiatic Reſearches, vol. i. p. 221, &c.

(a) The learned preſident, whoſe death will be lamented by every ſcholar, by the orientaliſt and the divine eſpecially, imagines, that this would fully appear from comparing together the *Dionyſiaca* of Nonus and the *Ramayan* of Valmic, the firſt poet of the Hindoos. He adds, that, in his opinion, Rhama was the ſon of Cuth, and that he might have eſtabliſhed the firſt regular government in that part of Aſia, in which his exploits are ſaid to have been performed.

Rhama, Rhamnus.

army of ſatyrs have been only a race of mountaineers, whom Rama, if ſuch a monarch ever exiſted, had civilized? However that may be, the large breed of Indian apes is at this moment held in high veneration by the Hindoos, and fed with devotion by the Brahmans, who ſeem in two or three places on the banks of the Ganges to have a regular endowment for the ſupport of them: they live in tribes of three or four hundred, are wonderfully gentle (I ſpeak as an eye-witneſs), and appear to have ſome kind of order and ſubordination in their little ſylvan polity." The feſtival of Rhama is held on the 9th day of the new moon of Chaitra, on which the war of Lauca is dramatically repreſented, concluding with an exhibition of the fiery ordeal, by which the victor's wife Sita gave proof of her connubial fidelity. Among the Hindoos there are a variety of very fine dramas of great antiquity on the ſtory of Rhama.

There are three Rhamas mentioned in the Indian mythology, who, together with Criſhna, the darling god of the Indian women, are deſcribed as youths of perfect beauty. The third Rhama is Criſhna's elder brother, and is conſidered as the eighth Avatar (B), inveſted with an emanation of his divine radiance. Like all the Avatars, Rhama is painted with gemmed Ethiopian or Parthian coronets; with rays encircling his head, jewels in his ears, two necklaces, one ſtraight, and one pendant on his boſom, with dropping gems; garlands of well-diſpoſed many-coloured flowers, or collars of pearls, hanging down below his waiſt; looſe mantles of golden tiſſue or dyed ſilk, embroidered on the hems with flowers elegantly thrown over one ſhoulder, and folded like ribbands acroſs the breaſt; with bracelets, two on one arm and on each wriſt: all the Avatars are naked to the waiſts, and uniformly with dark azure fleſh, in alluſion probably to the tint of that primordial fluid on which Narayan moved in the beginning of time; but their ſkirts are bright yellow, the colour of the curious pericarpium in the centre of the water-lily.

RHAMNUS, the BUCKTHORN, in botany: A genus of the monogynia order, belonging to the pentandria claſs of plants; and in the natural method ranking under the 43d order, *Dumoſæ*. The calyx is tubulous, with five minute ſcales ſurrounding the ſtamina; there is no corolla; the fruit is a berry. There are 27 ſpecies; of which the moſt remarkable are,

1. The catharticus, or common purging buckthorn, growing naturally in ſome parts of Britain. This grows to the height of 12 or 14 feet, with many irregular branches at the extremities. The leaves are oval-lanceolate, finely ſerrated on the edges, their nerves converging together. The flowers grow in cluſters, one on each footſtalk, white, and in this ſpecies divided into four ſegments: the fruit is a round black berry, containing four ſeeds. The juice of the berries is a ſtrong purgative, and is made uſe of for making the common ſyrup of buckthorn kept in the ſhops. The bark is emetic: the juice of the unripe berries with alum dyes yellow, of the ripe ones a fine green; the bark alſo dyes yellow. The green colour yielded by the berries, called by the French *verde-veſſie*, is much eſteemed by miniature painters. Rhamnus.

Of this ſpecies there are two varieties, *viz.* the dwarf buckthorn, a ſhrub of about a yard high, of a greeniſh colour but little ſhow; and the long-leaved dwarf buckthorn, which is a larger ſhrub, with leaves ſomewhat larger, but in other reſpects very ſimilar to the dwarf buckthorn.

2. The zizyphus is the ſpecies in which the lac inſect * forms its cells, and produces the wax called *gum-lac*. See LACCA. * See Coccus.

3. The lotus has the leaves, prickles, flowers, and fruit, of the zizyphus or jubeb; only with this difference, that the fruit is here round, ſmaller, and more luſcious, and at the ſame time the branches, like thoſe of the paliurus, are neither ſo much jointed nor crooked. The fruit is in great repute, taſtes ſomething like gingerbread, and is ſold in the markets all over the ſouthern diſtricts of Great Britain. The Arabs call it *aneb enta el ſeedra*, or *the jubeb of the ſeedra*; which Olavus Celſius had ſo high an opinion of, that he has deſcribed it as the dudaim of the ſcriptures. This ſpecies is very common in the Jereede and other parts of Bombay; and has been ſuppoſed by ſome to be the ſame plant with that celebrated by Homer for its enchanting property; though the latter is more generally ſuppoſed to have been a ſpecies of DIOSPYROS (which ſee). It is proper, however, to diſtinguiſh between both theſe ſhrubs and an herb often mentioned by the ancients under the name of *lotus*, which Homer mentions as being fed upon by the horſes of Achilles, and Virgil as proper to increaſe the milk of ſheep (ſee LOTUS). They are alſo different from the Egyptian lotus deſcribed by Herodotus; for which ſee NYMPHÆA.

4. The frangula, or berry-bearing alder, is a deciduous ſhrub, a native of England and moſt of the northern parts of Europe, and affords ſeveral varieties.

5. The Alpine, rough-leaved frangula, or berry-bearing alder, is alſo a deciduous ſhrub, and native of the Alps. It differs in no reſpect from the common ſort, except that it has no thorns, and that it will grow to be rather taller, with tough, large, and doubly laciniated leaves. The ſmooth-leaved alpine frangula is a variety of this ſpecies, with ſmooth leaves and of a lower growth.

6. The paliurus, or thorn of Chriſt, is a deciduous ſhrub or tree, a native of Paleſtine, Spain, Portugal, and Italy. It will grow to nearly the height of 14

(B) *Avatar* means the deſcent of the deity in his capacity of preſerver. The three firſt of theſe deſcents relate to ſome ſtupendous convulſion of our globe from the fountains of the deep, and the fourth exhibits the miraculous puniſhment of pride and impiety, appearing to refer to the deluge. Three of the others were ordained for the overthrow of tyrants or giants. Of theſe Avatars we have mentioned in the text, that Rhama is the eighth; Buddha, who appears to have been a reformer of the doctrines contained in Vedas, is the ninth: the tenth Avatar, we are told, is yet to come, and is expected to appear mounted (like the crowned conqueror in the Apocalypſe) on a white horſe, with a ſcimeter blazing like a comet to mow down all incorrigible and impenitent offenders who ſhall then be on the earth.

feet, and is armed with ſharp thorns, two of which are at each joint, one of which is about half an inch long, ſtraight, and upright; the other is ſcarcely half that length, and bent backward; and between them is the bed for next year's ſhoot. June is the time of flowering, and the flowers are ſucceeded by a ſmall fruit, ſurrounded by a membrane. "This plant (ſays Hanbury) is undoubtedly the firſt of which the crown of thorns for our Bleſſed Saviour was compoſed. The branches are very pliant, and the ſpines which are at every joint ſtrong and ſharp. It grows naturally about Jeruſalem, as well as in many parts of Judea; and there is no doubt that the barbarous Jews would make choice of it for their cruel purpoſe. But what farther confirms the truth of theſe thorns being then uſed, are the ancient pictures of our Bleſſed Saviour's crucifixion. The thorns of the crown on his head exactly anſwer to thoſe of this tree; and there is great reaſon to ſuppoſe theſe were taken from the earlieſt paintings of the Lord of Life: and even now our modern painters copy from them, and repreſent the crown as compoſed of theſe thorns. Theſe plants, therefore, ſhould principally have a ſhare in thoſe parts of the plantation that are more peculiarly deſigned for religious retirement; for they will prove excellent monitors, and conduce to due reflection on and gratitude to 'Him who hath loved us, and has waſhed us from our ſins," &c.

7. The common alaternus is an evergreen tree, and native of the ſouth of Europe. There are ſeveral varieties of this ſpecies; the moſt remarkable of which are the broad-leaved and the jagged-leaved alaternus, which have all been confounded with the phillyrea.

8. The inſectorius, or narrow-leaved buckthorn, is an evergreen ſhrub or tree, and native of Spain. It grows to the height of 10 or 12 feet, and ſends forth ſeveral branches from the bottom to the top. They are covered with a blackiſh or dark-coloured bark, and each of them is terminated by a long ſharp thorn. The fruit continues on the trees all winter, making a beautiful appearance among the narrow-cluſtered leaves at that ſeaſon.

9. The oleoides, or olive-leaved buckthorn, is an evergreen ſhrub, and native of Spain, and grows to the height of 8 or 10 feet. It ſends forth numerous branches, each of which is terminated by a long ſharp ſpine. The flowers are ſmall, of a whitiſh green colour, and are ſucceeded by round black berries.

RHAMPHASTOS, in ornithology, a genus belonging to the order of pice. The bill is very large, and ſerrated outwardly. The noſtrils are ſituated behind the baſe of the beak; and in moſt of the ſpecies the feet are toed, and placed two forwards and two backwards. The tongue is long, narrow, and feathered on the edges. Mr Latham enumerates 15 different ſpecies; of which the toucans are the moſt remarkable, and were formerly divided into four or five varieties, though Mr Latham makes them diſtinct ſpecies, of which we ſhall only deſcribe that called the red-beaked toucan.

Rhamphaſtos.

This bird is about the ſize of a jackdaw, and of a ſimilar ſhape, with a large head to ſupport its monſtrous bill. This bill, from the angles of the mouth to its point, meaſures ſix inches and an half; and its breadth in the thickeſt part is a little more than two. In the adult near the head it is one inch and a quarter; and it is a little rounded along the top of the upper chap, the under ſide being round alſo; the whole of the bill extremely light, and a little thicker than parchment. The upper chap is of a bright yellow, except on each ſide, which is of a fine ſcarlet colour; as is alſo the lower chap, except at the baſe, which is purple. Between the head and the bill there is a black line of ſeparation all round the baſe of the bill; in the upper part of which the noſtrils are placed, and are almoſt covered with feathers; which has occaſioned ſome writers to ſay that the toucan has no noſtrils. Round the eyes, on each ſide of the head, is a ſpace of bluiſh ſkin, void of feathers; above which the head is black, except a white ſpot on each ſide joined to the baſe of the upper chap. The hinder part of the neck, the back, wings, tail, belly, and thighs, are black. The under ſide of the head, throat, and the beginning of the breaſt, are white. Between the white on the breaſt, and the black on the belly, is a ſpace of red feathers, in the form of a new moon, with its horns upwards. The legs, feet, and claws, are of an aſh-colour; and the toes ſtand like thoſe of parrots, two before and two behind.

It is reported by travellers, that this bird, though furniſhed with ſo formidable a beak, is harmleſs and gentle, being ſo eaſily made tame as to ſit and hatch its young in houſes. It feeds chiefly upon pepper, which it devours very greedily, gorging itſelf in ſuch a manner that it voids it crude and unconcocted. This, however, is no objection to the natives from uſing it again: they even prefer it before that pepper which is freſh gathered from the tree; and ſeem perſuaded that the ſtrength and heat of the pepper is qualified by the bird, and that all its noxious qualities are thus exhauſted.

Whatever be the truth of this report, nothing is more certain than that the toucan lives only upon a vegetable diet; and, in a domeſtic ſtate, to which it is frequently brought in the warm countries where it is bred, it is ſeen to prefer ſuch food to all other. Pozzo, who bred one tame, aſſerts, that it leaped up and down, wagged the tail, and cried with a voice reſembling that of a magpie. It fed upon the ſame things that parrots do; but was moſt greedy of grapes, which, being plucked off one by one, and thrown in the air, it would moſt dexterouſly catch before they fell to the ground. Its bill, he adds, was hollow, and upon that account very light, ſo that it had but little ſtrength in ſo apparently formidable a weapon; nor could it peck or ſtrike ſtrongly therewith. But its tongue ſeemed to aſſiſt the efforts of this unwieldy machine: it was long, thin, and flat, not unlike one of the feathers on the neck of a dunghill cock; this it moved up and down, and often extended five or ſix inches from the bill. It was of a fleſh colour, and remarkably fringed on each ſide with very ſmall filaments exactly reſembling a feather.

It is probable that this long tongue has greater ſtrength than the thin hollow beak that contains it. It is likely that the beak is only a kind of ſheath for this peculiar inſtrument, uſed by the toucan, not only in making itſelf a neſt, but alſo in obtaining its proviſion. Nothing is more certain, than that this bird builds its neſt in holes of trees, which have been previouſly

Rhapis || Rhapſody.

viouſly ſcooped out for this purpoſe; and it is not very likely that ſo feeble a bill could be very ſerviceable in working upon ſuch hard materials.

Be this as it will, there is no bird ſecures its young better from external injury than the toucan. It has not only birds, men, and ſerpents, to guard againſt; but a numerous tribe of monkeys, ſtill more prying, miſchievous, and hungry, than all the reſt. The toucan, however, ſcoops out its neſt into the hollow of ſome tree, leaving only a hole large enough to go in and out at. There it ſits, with its great beak, guarding the entrance; and if the monkey ventures to offer a viſit of curioſity, the toucan gives him ſuch a welcome, that he preſently thinks proper to pack off, and is glad to eſcape with ſafety.

This bird is only found in the warm climates of South America, where it is in great requeſt, both for the delicacy of its fleſh, which is tender and nouriſhing, and for the beauty of its plumage, particularly the feathers of the breaſt. The ſkin of this part the Indians pluck off, and when dry glue to their cheeks; and this they conſider as an irreſiſtible addition to their beauty.

RHAPIS, in botany: A genus of the monogynia order, belonging to the hexandria claſs of plants; and in the natural method ranking under the firſt order, *Palmæ*. The calyx is a monophyllous trifid ſpatha; the corolla monopetalous and trifid. There are two ſpecies, *viz.* 1. Flabilliformis, or ground-ratan, a native of China; 2. Arundinacea, ſimple leaved rhapis, a native of Carolina.

RHAPSODI, Rhapsodists, in antiquity, perſons who made a buſineſs of ſinging pieces of Homer's poems. Cuper informs us, that the Rhapſodi were clothed in red when they ſung the Iliad, and in blue when they ſung the Odyſſey. They performed on the theatres, and ſometimes ſtrove for prizes in conteſts of poetry, ſinging, &c. After the two antagoniſts had finiſhed their parts, the two pieces or papers they were written in were joined together again: whence the name, *viz.* from ῥαπτω, *ſuo*, and ωδη *canticum*: but there ſeem to have been other Rhapſodi of more antiquity than theſe people, who compoſed heroic poems or ſongs in praiſe of heroes and great men, and ſung their own compoſitions from town to town for a livelihood; of which profeſſion Homer himſelf is ſaid to have been. See Bard

RHAPSODOMANCY, an ancient kind of divination performed by pitching on a paſſage of a poet at hazard, and reckoning on it as a prediction of what was to come to paſs. There were various ways of practiſing this rhapſodomancy. Sometimes they wrote ſeveral papers or ſentences of a poet on ſo many pieces of wood, paper, or the like, ſhook them together in an urn, and drew out one which was accounted the lot: ſometimes they caſt dice on a table whereon verſes were written, and that whereon the die lodged contained the prediction. A third manner was by opening a book, and pitching on ſome verſe at firſt ſight. This method they particularly called the *ſortes Præneſtinæ*; and afterwards, according to the poet, made uſe of, *ſortes Homericæ, ſortes Virgilianæ*, &c. See Sortes.

RHAPSODY, in antiquity, a diſcourſe in verſe ſung or rehearſed by a rhapſodiſt. Others will have rhapſody to ſignify a collection of verſes, eſpecially thoſe of Homer, which having been a long time diſperſed in pieces and fragments, were at length by Piſiſtratus's order digeſted into books called *rhapſodies*, from ῥαπτω *ſui* and ωδη *canticum*. Hence, among moderns, *rhapſody* is alſo uſed for an aſſemblage of paſſages, thoughts, and authorities, raked together from divers authors, to compoſe ſome new piece.

Rhe, Ree.

RHE, or Ree, a little iſland in the Bay of Biſcay, near the coaſt of Aunis in France. It was taken during the war with France which ended in 1763, in the expedition commanded by Hawke and Mordaunt.

RHEA americana. The American oſtrich of authors has been frequently mentioned, but till of late years very imperfectly known; being blended by ſome with other genera, although forming of itſelf a diſtinct one, differing in many things from all others. The older writers, however, have kept it ſeparate. It does not occur to us whether any author has figured this bird except *Nieremberg*, whoſe repreſentation conveys no juſt idea, which is wonderful, as is to be met with in ſufficient plenty in various parts of South America; nor has the bird itſelf made its appearance in the cabinets of collectors, until the one now in the Leverian muſeum.

M. Bajon, in his *Mem. ſur Cayenne*, gives a figure and deſcription of the jabirus, and ſeems clear that this bird is no other than the oſtrich of America. From this aſſertion, Mr Latham, in his *Synopſis*, leaves the matter undecided; but this author, in his *Index Ornithol.* from having met with the ſpecimen above alluded to, and ſupported in an account of its manners given by Molina in his *Hiſt. Nat. du Chili*, treats this matter on more certain grounds, ſo as to enable us to give the following deſcription.

In ſize the American oſtrich is very little inferior to the common one: the bill is ſloped not unlike that of a gooſe, being flat on the top and rounded at the end: the eyes are black, and the lids furniſhed with hairs: the head is rounded, and covered with downy feathers: the neck is two feet eight inches long, and feathered alſo: from the tip of one wing to that of the other extended, the length is eight feet; but from the want of continuity of the webs of the feathers, and their laxity of texture, the bird is unable to raiſe itſelf from the ground; it is, however, capable of greatly aſſiſting itſelf by their motion in running, which it does very ſwiftly: the legs are ſtout, bare of feathers above the knees, and furniſhed with three toes, all placed forwards, each having a ſtraight and ſtout claw as in the caſſowary; on the heel is a callous knob, ſerving in place of a back toe: the general colour of plumage is dull grey mixed with white, inclining to the latter on the under parts: the tail is very ſhort, and not conſpicuous, being entirely covered with long looſe and floating feathers, having origin from the lower part of the back and rump, and entirely covering it: the bill and legs are brown.

Molina obſerves that this bird varies; the body in ſome being white, in others black. In reſpect to manners, it is ſaid to be a general feeder, but more fond of flies, which it catches with great dexterity, and will alſo, like the common oſtrich, ſwallow bits of iron and any other traſh offered to it. In common with the oſtrich of the old world, it lays a number of eggs, from 40 to 60, in the ſand, each of them holding a quart; but

Rheedia ‖ Rhetores.

but it differs from that bird in many particulars, eſpecially in wanting the callofity on the ſternum, and ſpurs on the wing. With theſe laſt the common oſtrich is known to defend itſelf: in detect of them, the one here treated of uſes the feet with ſuch addreſs as to become at once a furious and dangerous antagoniſt. The female calls its young ones together with a kind of whiſtling note ſomewhat ſimilar to that of a mouſe: when young it is very tame, frequently following the firſt creature it meets with. The fleſh of this bird is ſaid to be very unpalatable. It is found in various parts of South America, from Patagonia to Guiana, and is known by the name of *Choique*. We are happy to be able to preſent our readers with an accurate drawing of the bird. See Plate CCCCXXXVII.

RHEEDIA, in botany: A genus of the monogynia order, belonging to the polyandria claſs of plants; and in the natural method ranking with thoſe of which the order is doubtful. The corolla is tetrapetalous; there is no calyx; and the fruit is a triſpermous berry.

RHEGIUM (anc. geog.), ſo very ancient a city as to be ſuppoſed to take its name from the violent burſting of the coaſt of Italy from Sicily; thought to have been formerly conjoined (Mela, Virgil). A city of the Bruttii, a colony of Chalcidians from Eubœa: a ſtrong barrier oppoſed to Sicily (Strabo); mentioned by Luke; ſurnamed *Julium* (Ptolemy), from a freſh ſupply of inhabitants ſent thither by Auguſtus, after driving Sextus Pompeius out of Sicily (Strabo); and thus was in part a colony, retaining ſtill the right of a municipium (Inſcription). The city is now called *Reggio*, in the Farther Calabria.

RHEIMS, a city of France in Champagne, and capital of Rhemois. It is one of the moſt ancient, celebrated, and largeſt places in the republic, had an archbiſhop's ſee, whoſe archbiſhop was duke and peer of France. It is about four miles in circumference, and contains ſeveral fine ſquares, well-built houſes, and magnificent churches. It had a mint, an univerſity, and five abbeys, the moſt famous of which was that of St Remy. There are alſo ſeveral triumphal arches and other monuments of the Romans. It is ſeated on the river Veſle, on a plain ſurrounded by hills, which produce excellent wine. E. Long. 4. 8. N. Lat. 49. 14.

RHENISH WINE, that produced on the hills about Rheims. This wine, is much uſed in medicine as a ſolvent of iron, for which it is well calculated on account of its acidity. Dr Percival obſerves, that it is the beſt ſolvent of the Peruvian bark; in which, however, he thinks its acidity has no ſhare, becauſe an addition of vinegar to water does not augment its ſolvent power.

RHETORES, amongſt the Athenians, were ten in number, elected by lot to plead public cauſes in the ſenate-houſe or aſſembly. For every cauſe in which they were retained, they received a drachm out of the public money. They were ſometimes called Συνηγοροι, and their fee το Συνηγορικον. No man was admitted to this office before he was 40 years of age, though others ſay 30. Valour in war, piety to their parents, prudence in their affairs, frugality, and temperance, were neceſſary qualifications for this office, and every candidate underwent an examination concerning theſe virtues previous to the election. The orators at Rome were not unlike the Athenian rhetores. See ORATOR. Rhetorians ‖ Rheum.

RHETORIANS, a ſect of hereties in Egypt, ſo denominated from Rhetorius their leader. The diſtinguiſhed tenets of this hereſiarch, as repreſented by Philaſtrius, was, that he approved of all the hereſies before him, and taught that they were all in the right.

RHETORIC, the art of ſpeaking copiouſly on any ſubject, with all the advantages of beauty and force. See ORATORY.

RHEUM, a thin ſerous humor, occaſionally oozing out of the glands about the mouth and throat.

RHEUM, *Rhubarb*: A genus of the monogynia order, belonging to the enneandria claſs of plants; and in the natural method ranking under the 12th order, *Holoraceæ*. There is no calyx; the corolla is ſexfid and perſiſtent; and there is one triquetrous ſeed. There are five ſpecies, viz. 1. The rhaponticum, or common rhubarb, hath a large, thick, fleſhy, branching, deeply-ſtriking root, yelloviſh within; crowned by very large, roundiſh, heart-ſhaped ſmooth leaves, on thick, ſlightly-furrowed foot-ſtalks: and an upright ſtrong ſtem, two or three feet high, adorned with leaves ſingly, and terminated by thick cloſe ſpikes of white flowers. It grows in Thrace and Scythia, but has been long in the Engliſh gardens. Its root affords a gentle purge. It is however of inferior quality to ſome of the following ſorts; but the plant being aſtringent, its young ſtalks in ſpring, being cut and peeled, are uſed for tarts. 2. The palmatum, palmated-leaved true Chineſe rhubarb, hath a thick fleſhy root, yellow within; crowned with very large palmated leaves, being deeply divided into acuminated ſegments, expanded like an open hand; upright ſtems, five or ſix feet high or more, terminated by large ſpikes of flowers *. This is now proved to be the true foreign rhubarb, the purgative quality of which is well known. 3. The compactum, or Tartarian rhubarb, hath a large, fleſhy, branched root, yellow within; crowned by very large, heart ſhaped ſomewhat lobated, ſharply indented, ſmooth leaves, and an upright large ſtem, five or ſix feet high, garniſhed with leaves ſingly, and branching above; having all the branches terminated by nodding panicles of white flowers. This has been ſuppoſed to be the true rhubarb; which, however, though of ſuperior quality to ſome ſorts, is accounted inferior to the rheum palmatum. 4. The undulatum, undulated, or waved-leaved Chineſe rhubarb, hath a thick, branchy, deep-ſtriking root, yellow within; crowned with large, oblong, undulate, ſomewhat hairy leaves, having equal foot-ſtalks, and an upright firm ſtem, four feet high; garniſhed with leaves ſingly, and terminated by long looſe ſpikes of white flowers. 5. The Arabian ribes, or currant rhubarb of Mount Libanus, hath a thick fleſhy root, very broad leaves, full of granulated protuberances, and with equal foot-ſtalks, and upright firm ſtems; three or four feet high, terminated by ſpikes of flowers, ſucceeded by berry-like ſeeds, being ſurrounded by a purple pulp. All theſe plants are perennial in root, and the leaves and ſtalks are annual. The roots being thick, fleſhy, generally divided, ſtrike deep into the ground; of a brownish colour without and yellow within: the leaves riſe in the ſpring, generally come up in a large head folded together,

* See Botany, p. 439. and Plate CVII.

Rheum. together, gradually expanding themſelves, having thick foot-ſtalks; and grow from one to two feet high, or more, in length and breadth, ſpreading all round: amidſt them riſe the flower-ſtems, which are garniſhed at each joint by one leaf, and are of ſtrong and expeditious growth, attaining their full height in June, when they flower; and are ſucceeded by large triangular ſeeds, ripening in Auguſt. Some plants of each ſort merit culture in gardens for variety; they will effect a ſingularity with their luxuriant foliage, ſpikes, and flowers: and as medical plants, they demand culture both for private and public uſe.

They are generally propagated by ſeeds ſowed in autumn ſoon after they are ripe, or early in the ſpring, in any open bed of light deep earth; remarking, thoſe intended for medical uſe ſhould generally be ſowed where they are to remain, that the roots, being not diſturbed by removal, may grow large. Scatter the ſeeds thinly, either by broad-caſt all over the ſurface, and raked well in; or in ſhallow drills a foot and half diſtance, covering them near an inch deep. The plants will riſe in the ſpring, but not flower till the ſecond or third year: when they, however, are come up two or three inches high, thin them to eight or ten inches, and clear out all weeds; though thoſe deſigned always to ſtand ſhould afterwards be hoed out to a foot and a half or two feet diſtance: obſerving, if any are required for the pleaſure ground, &c. for variety, they ſhould be tranſplanted where they are to remain in autumn, when their leaves decay, or early in ſpring, before they ſhoot: the others remaining where ſowed, muſt have the ground kept clean between them; and in autumn, when the leaves and ſtalks decay, cut them down, and ſlightly dig the ground between the rows of plants, repeating the ſame work every year. The roots remaining, they increaſe in ſize annually: and in the ſecond or third year many of them will ſhoot up ſtalks, flower, and perfect ſeeds; and in three or four years the roots will be arrived to a large ſize; though older roots are generally preferable for medical uſe.

In Mr Bell's Travels we have an account of ſome curious particulars relating to the culture of rhubarb. He tells us, that the beſt rhubarb grows in that part of Eaſtern Tartary called *Mongalia*, which now ſerves as a boundary between Ruſſia and China. The marmots contribute greatly to the culture of the rhubarb. Wherever you ſee 10 or 20 plants growing, you are ſure of finding ſeveral burrows under the ſhades of their broad-ſpreading leaves. Perhaps they may ſometimes eat the leaves and roots of this plant; however, it is probable the manure they leave about the roots contributes not a little to its increaſe; and their caſting up the earth, makes it ſhoot out young buds, and multiply. This plant does not run, and ſpread itſelf, like docks and others of the ſame ſpecies; but grows in tufts, at uncertain diſtances, as if the ſeeds had been dropped with deſign. It appears that the Mongals never accounted it worth cultivating; but that the world is obliged to the marmots for the quantities ſcattered, at random, in many parts of this country: for whatever part of the ripe ſeed happens to be blown among the thick graſs, can very ſeldom reach the ground, but muſt there wither and die; whereas, ſhould it fall among the looſe earth thrown up by the marmots, it immediately takes root, and produces a new plant. Rheum.

After digging and gathering the rhubarb, the Mongals cut the large roots into ſmall pieces, in order to make them dry more readily. In the middle of every piece they ſcoop a hole, through which a cord is drawn, in order to ſuſpend them in any convenient place. They hang them for the moſt part about their tents, and ſometimes on the horns of their ſheep. This is a moſt pernicious cuſtom, as it deſtroys ſome of the beſt part of the root: for all about the hole is rotten and uſeleſs; whereas, were people rightly informed how to dig and dry this plant, there would not be one pound of refuſe in an hundred; which would ſave a great deal of trouble and expence, that much diminiſh the profits on this commodity. At preſent, the dealers in this article think theſe improvements not worthy of their attention, as their gains are more conſiderable on this than on any other branch of trade. Perhaps the government may hereafter think it proper to make ſome regulations with regard to this matter.

Two ſorts of rhubarb are met with in the ſhops. The firſt is imported from Turkey and Ruſſia, in roundiſh pieces freed from the bark, with a hole through the middle of each: they are externally of a yelloviſh colour, and on cutting appear variegated with lively reddiſh ſtreaks. The other, which is leſs eſteemed, comes immediately from the Eaſt Indies, in longiſh pieces, harder, heavier, and more compact than the foregoing. The firſt ſort, unleſs kept very dry, is apt to grow mouldy and worm-eaten; the ſecond is leſs ſubject to theſe inconveniences. Some of the more induſtrious artiſts are ſaid to fill up the worm-holes with certain mixtures, and to colour the outſide of the damaged pieces with powder of the finer ſorts of rhubarb, and ſometimes with cheaper materials: this is often ſo nicely done, as effectually to impoſe upon the buyer, unleſs he very carefully examines each piece. The marks of good rhubarb are, that it be firm and ſolid, but not flinty; that it be eaſily pulveriſable, and appear, when powdered, of a fine bright yellow colour; that, upon being chewed, it impart to the ſpittle a ſaffron tinge, without proving ſlimy or mucilaginous in the mouth. Its taſte is ſubacrid, bitteriſh, and ſomewhat aſtringent; the ſmell lightly aromatic.

Rhubarb is a mild cathartic, which operates without violence or irritation, and may be given with ſafety even to pregnant women and children. Beſides its purgative quality, it is celebrated for an aſtringent one, by which it ſtrengthens the tone of the ſtomach and inteſtines, and proves uſeful in diarrhœas and diſorders proceeding from a laxity of the fibres. Rhubarb in ſubſtance operates more powerfully as a cathartic than any of the preparations of it. Watery tinctures purge more than the ſpirituous ones; whilſt the latter contain in greater perfection the aromatic, aſtringent, and corroborating virtues of the rhubarb. The doſe, when intended as a purgative, is from a ſcruple to a dram or more.

The Turkey rhubarb is, among us, univerſally preferred to the Eaſt India ſort, though this laſt is for ſome purpoſes at leaſt equal to the other; it is manifeſtly more aſtringent, but has ſomewhat leſs of an aromatic flavour. Tinctures drawn from both with rectified ſpirit have nearly the ſame taſte: on diſtilling off

of the menſtruum, the extract from the tincture of the Eaſt India rhubarb proved conſiderably the ſtrongeſt.

Rhubarb has been cultivated of late in Britain with conſiderable ſucceſs, and for medical purpoſes is found to equal that of foreign growth, as is proved by the Tranſactions of the London Society for encouraging Arts, Manufactures, and Commerce, who have rewarded ſeveral perſons both for cultivating and curing it. In the Tranſactions for 1765, the gold medal was adjudged to Mr William Lowes, for raiſing from ſeed in the year 1762 upwards of 500 plants of the true rhubarb of the ſhops, purſuant to the London Pharmacopœia of 1746, which in the ſecond and third weeks of October were tranſplanted into a deep loam, at four feet diſtance from each other, according to rules laid down by the Society. In 1793 it was judged to Mr Thomas Jones, from whoſe papers we derive the following information.

After giving an accurate account of his experiments and obſervations, he concludes, that the ſeaſon for ſowing is the ſpring about March or April, or in autumn about Auguſt and September; that thoſe plants which are raiſed in the ſpring ſhould be tranſplanted in autumn, and *vice verſa*; that they cannot have too much room; that room and time are eſſentially neceſſary to their being large, of a good appearance, and perhaps to the increaſe of their purgative qualities; that to effect theſe purpoſes, the ſoil muſt be light, loamy, and rich, but not too much ſo, leſt the roots ſhould be too fibrous; that their ſituation can ſcarcely be too dry, as more evils are to be expected from a ſuperabundancy of moiſture than any actual want of it: and laſtly, we may conclude, that in particular the injuries which they are ſubject to are principally during their infancy, and to be imputed to inſects and inattention to the planting ſeaſon; afterwards, from too great an expoſure to froſt: but that none can be dreaded from heat; and that in general they are hardy and eaſy of cultivation, when arrived beyond a certain term.

The method of curing rhubarb, as propoſed by Dr Tunberg of Stockholm, is as follows: "No roots ſhould be taken up till they have been planted ten years: they ſhould be taken out of the ground either in winter, before the froſt ſets in, or in the beginning of ſpring, and immediately cut into pieces, and carefully barked; let them be ſpread upon a table for three or four days, and be frequently turned, that the juices may thicken or condenſe within the roots. After this proceſs, make a hole in each piece, and put a thread through it; by which let them hang ſeparately, either within doors, or in ſome ſheltered ſhady ſhed. Some perſons dry them in a different way: they incloſe the roots in clay, and make a hole in the clay, about the thickneſs of a gooſe quill, and in this manner hang up each piece to [illegible], that the moiſture may not evaporate, and the growth of the root be weakened. But the methods which the Tartars follow is a bad one: they [illegible] out of the ſoil where they grow, bark [illegible] and [illegible] them, and hang them round the necks of their camels, that they may dry as they travel; but this greatly leſſens the medicinal virtue [illegible]."

Mr Thomas Halley of Pontefract in Yorkſhire, to [illegible] the Society voted the ſilver medal in 1793, informs us, that his father tried various experiments for curing rhubarb, as waſhing, bruiſing, barking, and peeling, and he dried them in the ſun, on a kiln, in a ſtove, or in a warm kitchen. But of the ſucceſs of all or either of theſe methods we have no account, owing to the death of Mr Halley's father. The firſt, however, to them, five different ſpecimens, which the Society acknowledges to be ſuperior to any rhubarb hitherto cured in England, and produced to them. The roots ſent, Mr Halley ſays, were planted about the year 1781 in a light ſandyiſh ſoil, but were much neglected. They were taken up in the ſpring of 1792, and being thoroughly diveſted of the adhering earth, were placed for ſome weeks on the floor of a cool warehouſe: the fibres were then taken off, cut up, and dried on the flue of a green-houſe; but, from miſmanagement, were entirely ſpoiled. The prime roots were ſevered in ſmall pieces, peeled clean, and thoroughly cleared of every particle of unſoundneſs. Part was ſeparately laid in ſieves, and the remainder perforated, ſtrung, and ſuſpended in feſtoons from the ceiling of a warm kitchen. The manner of dreſſing conſiſts in paring off the external coat with a ſharp knife, as thin and clean as poſſible, and then finiſhing it off by a piece of fine linen, with its own powder; which powder may be procured from the chips and ſmall pieces, either by grinding or pounding it in a large mortar.

In the year 1794 the Society adjudged the gold medal to Mr William Hayward of Hanbury, Oxfordſhire, for propagating rhubarb by offſets taken from the crowns of large plants, inſtead of ſeeds, for the purpoſe of bringing it to perfection in a ſhorter time, which fully anſwered his expectations. Mr Hayward was a candidate in the year 1789 for the gold medal; but having miſunderſtood their rules, he was not entitled to it, though with great propriety they voted to him the ſilver medal; in conſequence of which he ſent them his method of culture and cure. His method of cultivating Turkey rhubarb from ſeed is thus explained to the Society: "I have uſually ſown the ſeed about the beginning of February, on a bed of good ſoil (if rather ſandy the better), expoſed to an eaſt or weſt aſpect, in preference to the ſouth; obſerving a full ſun to be prejudicial to the vegetation of the ſeeds, and to the plants whilſt young. The ſeeds are beſt ſown moderately thick (broad-caſt), treading them regularly in, as is uſual with parſnips and other light ſeeds, and then raking the ground ſmooth. I have ſometimes, when the ſeaſon has been wet, made a bed for ſowing the rhubarb ſeeds upon, about two feet thick, with new dung from the ſtable, covering it near one foot thick with good ſoil. The intent of this bed is not for the ſake of warmth, but ſolely to prevent the riſing of earthworms, which, in a moiſt ſeaſon, will frequently deſtroy the young crop. If the ſeed is good, the plants often riſe too thick; if ſo, when they have attained ſix leaves they ſhould be taken carefully up (where too cloſe), leaving the ſtanding crop eight or ten inches apart: thoſe taken up may be planted at the ſame diſtance, in a freſh ſpot of ground, in order to furniſh other plantations. When the plants in general are grown to the ſize that cabbage plants are uſually ſet out for a ſtanding crop, they are beſt planted where they are to remain, in beds four feet wide, one row along the middle of the bed, leaving two yards diſtance between the

plants,

Ricinus Americanus

Plate. CCCCXXXVII.

Ramphastos Tucan

Rhea Americana

Ricinus Communis

Rheum. plants, allowing an alley between the beds about a foot wide, for convenience of weeding the plants. In the autumn, when the decayed leaves are removed, if the shoveling of the alleys are thrown over the crowns of the plants, it will be found of service.

His mode of cultivating the same plant by offsets is thus given: "On taking up some plants the last spring, I slipped off several offsets from the heads of large plants: these I set with a dibble about a foot apart, in order, if I found them thrive, to remove them into other beds. On examining them in the autumn, I was surprised to see the progress they had made, and pleased to be able to furnish my beds with 40 plants in the most thriving state. Though this was my first experiment of its kind, I do not mean to arrogate the discovery to myself, having known it recently tried by others, but without being informed of their success. I have reason to think this valuable drug will, by this method, be brought much sooner to perfection than from seed."

His method of curing rhubarb is thus described: "The plants may be taken up either early in the spring, or in autumn, when the leaves are decayed, in dry weather if possible, when the roots are to be cleared from dirt (without washing): let them be cut into pieces, and with a sharp knife freed from the outer coat, and exposed to the sun and air for a few days, to render the outside a little dry. In order to accelerate the curing of the largest pieces, a hole may be scooped out with a penknife: these and the smaller parts are then to be strung on packthread, and hung up in a warm room (I have always had the conveniency of such a one over a baker's oven), where it is to remain till perfectly dry. Each piece may be rendered more sightly by a common file, fixing it in a small vice during that operation: afterwards rub over it a very fine powder, which the small roots furnish in beautiful perfection, for this and every other purpose where rhubarb is required."

In the year 1794, too, the Society adjudged the gold medal to Mr Ball for his method of curing the true rhubarb, which is as follows: "I take the roots up when I find the stalks withering or dying away, clean them from the earth with a dry brush, cut them in small pieces of about four or five inches in breadth, and about two in depth, taking away all the bark, and make a hole in the middle, and string them on packthread, keeping every piece apart; and every morning, if the weather is clear and fine, I place them in the open part of the garden, on stages, erected by fixing small posts about six feet high in the ground, and six feet asunder, into which I fix horizontal pegs, about a foot apart, beginning at the top; and the rhubarb being stringed crosswise on small poles, I place them on these pegs; so that if it should rain, I could easily remove each pole with the suspended pieces, into any covered place. I never suffer them to be out at night, as the damps at this season would be apt to mould them; and if at any time I perceive the least mark of mould, I rub it off with a dry cloth. In some of the pieces of rhubarb which I have cured this year, I have made holes about half an inch diameter in the middle, for the free passage of air, and have found that every one of these pieces dried better than the others where no such holes were made; and have likewise hung several strings in the kitchen, and never exposed them in the open air, and found them to dry exceedingly well, and much better than these in the open air. Some years since I dried a quantity of rhubarb on a malt-kiln, keeping up the thermometer to 80 degrees, which answered well, but I think rather dried too quick: the roots which I have cured this year are a part of the plantation of 1789, and for which the Society was so kind as to give me a medal (A)."

Rhexia R e

RHEXIA, in botany: A genus of the monogynia order, belonging to the octandria class of plants; and in the natural method ranking with those of the 17th order, *Calycanthemæ*. The calyx is quadrifid, with four petals inserted into it; the antheræ are declining; the capsule is quadrilocular, within the belly of the calyx.

RHINANTHUS, in botany: A genus of the angiospermia order, belonging to the didynamia class of plants; and in the natural method ranking under the 40th order, *Personatæ*. The calyx is quadrifid, and ventricose; the capsule bilocular, obtuse, and compressed.

RHINE, a large river of Germany, famous both in ancient and modern history. It rises among the Alpes Lepontiæ, or Grisons; and first traversing the Lacus Acronius, divides the Rhæti and Vindelici from the Helvetii, and then the Germans from the Gauls and Belgæ; and running from south to north for the greatest part of its way, and at length bending its course west, it empties itself at several mouths (Cæsar); at three mouths into the German ocean, (Pliny); viz. the western, or Helius; the northern, or Fleuvus; and the middle between both these, which retains the original name, *Rhenus*: and in this Ptolemy agrees.—Mela and Tacitus mention two channels, and as many mouths, the right and left; the former running by Germany, and the latter by Gallia Belgica: and thus also Asinius Pollio, and Virgil; the cut or trench of Drusus not being made in their time, whereby the middle channel was much drained and reduced, and therefore overlooked by Tacitus and Mela; and which Pliny calls the *Scanty*. To account for Cæsar's several mouths, is a matter of no small difficulty with the commentators; and they do it no otherwise than by admitting that the Rhine naturally formed small drains or rivulets from itself; the cut of Drusus being long posterior to him; in whose time Asinius Pollio, quoted by Strabo, who agrees with him therein, affirmed that there were but two mouths, finding fault with those who made them more: and he must mean the larger mouths, which emitted larger streams. The Romans, especially the poets, used the term *Rhenus* for *Germany*, (Martial).—At present, the river, after entering the Netherlands at Schenkinhaus, is divided into several channels, the two largest of which obtain the names of the *Lech* and the *Waal*, which running thro' the United Provinces, falls into the German ocean below Rotterdam.

(A) The Society also adjudged to Mr Ball the medal in 1790, for cultivating rhubarb.

[illegible] the Rhine, [illegible] of the palatinate [illegible] Rhine, and the three ecclefiaſtical electorates, [illegible] Cologne, Mentz, and Treves.

[illegible] Mentz, [illegible] of the Landgravi- [illegible] comprehending the Wetterau; [illegible] [illegible] [illegible] [illegible] a part of Germa- [illegible] [illegible] [illegible] to France.

RHINECK, a town of Germany, in the circle of the Lower Rhine, and [illegible] of Cologne. It was [illegible] the French, but reſtored to the [illegible] of Cologne by the treaty of Utrecht. It [illegible] on the Rhine, in E. Long. 6. 59. N. Lat. [illegible].

RHINECK, a town of Germany, in the archbiſhopric of Cologne, ſeated on the Rhine, E. Long. 7. [illegible]. N. Lat. 50. [illegible]. There is another town of the [illegible] in the Grifons, capital of Rhinthal, ſeated on the Rhine, near the lake of Conſtance, with a good caſtle. E. Long. 9. 53. N. Lat. 47. 38.

RHINFELD, a ſmall but ſtrong town of Germany, in the circle of Suabia, and the beſt of the four forest-towns belonging to the houſe of Auſtria. It has been often taken and retaken in the German wars; and is ſeated on the Rhine, over which there is a handſome bridge. E. Long. 7. 53. N. Lat. 47. 40.

RHINEGAU, a beautiful diſtrict of the electorate of Mentz, is ſituated on the Rhine, about three miles from the city of Mentz, and is ſo populous that it looks like one entire town intermixed with gardens and vineyards. The Rhine here grows aſtoniſhingly wide, and forms a kind of ſea, near a mile broad, in which are ſeveral well wooded little iſlands. The Rhinegau forms an amphitheatre, the beauties of which are beyond all deſcription. At Walluf, the very high hills come nearly down to the river ſide; from thence they recede again into the country, forming a kind of half circle, the other end of which is 15 miles off at Rudeſheim, on the banks of the Rhine. The banks of the river, the hills which form the circles, and the ſlopes of the great mountains, are thick ſown with villages and hamlets. The white appearance of the buildings, and the fine blue ſlated roofs of the houſes playing amidſt the various green of the landſcape, have an admirable effect. In the ſpace of every mile, as you ſail down the river, you meet with a village which in any other place would paſs for a town. Many of the villages contain from 300 to 400 families; and there are 30 of them in a ſpace of 15 miles long and ſix miles broad, which is the width of this beautiful amphitheatre. The declivities of all the hills and mountains are planted thick with vineyards and fruit trees, and the thick wooded tops of the hills caſt a gloomy horror over the otherwiſe cheerful landſcape. Every now and then a row of rugged hills run directly down to the ſhore, and domineer majeſtically over the leſſer hills under them. On one of theſe great mountains, juſt about the middle of the Rhinegau, you meet with *Johannis-Berg*, a village which produces ſome of the beſt Rheniſh. Before this village is a pretty little riſing, and near the banks of the river there is a very fine old caſtle, which gives unſpeakable majeſty to the whole landſcape. Indeed, in every village, you meet with ſome or other lofty building, which contributes very much to the decoration of the whole. This country is indebted for its riches to this ſemicircular hill, which proteſts it from the cold winds of the eaſt and north, at the ſame time that it leaves room enough for the ſun to exerciſe his benign influence. The groves and higher ſlopes of the hills make excellent paſtures, and produce large quantities of dung, which, in a country of this ſort, is of incalculable value. Rhinegau.

The bank of the Rhine, oppoſite to the Rhinegau, is exceedingly barren, and heightens the beauty of the proſpect on the other ſide by the contraſt it exhibits; on this ſide, you hardly meet above three or four villages, and theſe are far diſtant from each other. The great interval between them is occupied by heaths and meadows, only here and there a thick wood affords ſome ſhade, and a few corn fields among the villages enliven the gloomy landſcape. The back ground of this country is the moſt picturesque part of all. It is formed by a narrow gulhet of mountains, which diminiſh in perſpective between Rudeſheim and Bingen. Perpendicular mountains and rocks hang over the Rhine in this place, and ſeem to make it the dominion of eternal night. At a diſtance, the Rhine ſeems to come out of this landſcape through a hole under ground; and it appears to run tediouſly, in order to enjoy its courſe through a pleaſant country the longer. Amidſt the darkneſs which covers this back ground, the celebrated Mouſe tower ſeems to ſwim upon the river. In a word, there is not any thing in this whole tract that does not contribute ſomething to the beauty and magnificence of the whole; or, if I may be permitted the expreſſion, to make the paradiſe more welcome. As you ſail along the Rhine, between Mentz and Bingen, the banks of the river form an oval amphitheatre, which makes one of the richeſt and moſt picturesque landſcapes to be ſeen in Europe. The inhabitants of theſe regions are ſome of them extremely rich, and ſome extremely poor. The happy middle ſtate is not for countries the chief product of which is wine; for, beſides that the cultivation of the vineyard is infinitely more troubleſome and expenſive than agriculture, it is ſubjected to revolutions, which in an inſtant reduce the holder of land to the condition of a day labourer. It is a great misfortune for this country, that, though reſtrained by law, the nobility are, through connivance of the Elector, allowed to purchaſe as much land as they pleaſe. The peaſant generally begins by running in debt for his vineyard; ſo that if it does not turn out well, he is reduced to day-labour, and the rich man extends his poſſeſſions to the great detriment of the country. There are ſeveral peaſants here, who having incomes of 30, 50, or 100,000 guilders a-year, have laid aſide the peaſant, and aſſumed the wine merchant; but, ſplendid as their ſituation is, it does not compenſate, in the eyes of the humane man, for the ſight of ſo many poor people with which the villages ſwarm. In order to render a country of this kind proſperous, the ſtate ſhould appropriate a fund to the purpoſe of maintaining the peaſant in bad years, and giving him the aſſiſtance which his neceſſities, and his want of ready money, may from time to time make convenient.

The inhabitants of the Rhinegau are a handſome and uncommonly ſtrong race of men. You ſee at the very firſt ſight that their wine gives them merry hearts and ſound bodies. They have a great deal of natural wit, and a vivacity and jocoſeneſs, which diſtinguiſhes them very

Rhinfels | Rhinoceros

very much from their neighbours. You need only compare them with ſome of theſe, to be convinced that the drinker of wine excels the drinker of beer and water, both in body and mind, and that the inhabitant of the ſouth is much ſtouter than he who lives in the north; for though the wine drinker may not have quite as much fleſh as he who drinks only beer, he has better blood, and can bear much more work. Tacitus had already obſerved this, in his treatiſe *De moribus Germanorum*. "The large and corpulent bodies of the Germans (ſays he) have a great appearance, but are not made to laſt." At that time almoſt all the Germans drank only water; but the mere drinking of wine has effected a revolution in ſeveral parts of Germany, which makes the preſent inhabitants of theſe countries very different from thoſe deſcribed by Tacitus. Black and brown hair is much commoner here than the white, which made the Germans ſo famous in old Rome. "It will be eaſily imagined (ſays Baron Reiſbach), that the monks fare particularly well in ſo rich a country. We made a viſit to the prelate of Erbach. Theſe lordly monks, for ſo in every reſpect they are, have an excellent hunt, rooms magnificently furniſhed, billiard tables, half a dozen beautiful ſinging women, and a ſtupendous wine cellar, the well ranged batteries of which made me ſhudder. A monk, who ſaw my aſtoniſhment at the number of the caſks, aſſured me, that, without the benign influence which flowed from them, it would be totally impoſſible for the cloiſter to ſubſiſt in ſo damp a ſituation."

RHINFELS, a caſtle of Germany, in the circle of the Lower Rhine, in a county of the ſame name. It is looked upon as one of the moſt important places ſeated on the Rhine, as well in regard to its ſtrength as ſituation. It is near St Goar, and built on a craggy rock. This fortreſs commands the whole breadth of the Rhine, and thoſe who paſs are always obliged to pay a conſiderable toll. In the time of war it is of great importance to be maſters of this place. E. Long. 7. 43. N. Lat. 50. 3.

RHINLAND, a name given to a part of South Holland, which lies on both ſides the Rhine, and of which Leyden is the capital town.

RHINOCEROS, in zoology, a genus of quadrupeds belonging to the order of belluæ. The name is entirely Greek; but theſe animals were totally unknown to the ancient Greeks. Ariſtotle takes no notice of them, nor any other Greek writer till Strabo, nor Roman till Pliny. It is probable they did not frequent that part of India into which Alexander had penetrated, ſince it was near 300 years after that Pompey brought them to Europe. From this time till the days of Heliogabalus, the rhinoceros was frequently exhibited in the Roman ſpectacles; and he has often been tranſported into Europe in more modern times; but they were long very ill repreſented, and very imperfectly deſcribed, till ſome that arrived in London in 1739 and 1741 were inſpected, by which the errors and caprices of former writers were detected.

There are two ſpecies of rhinoceros, the firſt of which is the *unicornis*, the length of which, Buffon tells us, from the extremity of the muzzle to the origin of the tail, is at leaſt 12 feet, and the circumference of the body is nearly the ſame. "The rhinoceros which came to London in the year 1739 was ſent preſent, from Bengal. Though not above two years of age, Natural the expence of his food and journey amounted to near Hiſtory, L. 1000 Sterling. He was fed with rice, ſugar, and vol. v. p. hay. He had daily ſeven pounds of rice, mixed with 92, &c. three pounds of ſugar, and divided into three portions. He had likewiſe hay and green herbs, which laſt he preferred to hay. His drink was water, of which he took large quantities at a time (A). He was of a peaceable diſpoſition, and allowed all parts of his body to be touched. When hungry, or ſtruck by any perſon, he became miſchievous, and in both caſes nothing appeaſed him but food. When enraged, he ſprung forward, and nimbly raiſed himſelf to a great height, puſhing at the ſame time his head furiouſly againſt the walls, which he performed with amazing quickneſs, notwithſtanding his heavy aſpect and unwieldy maſs. I often obſerved, ſays Dr Parſons, theſe movements produced by rage or impatience, eſpecially in the mornings before his rice and ſugar were brought to him. The vivacity and promptitude of his movements, Dr Parſons adds, led me to think, that he is altogether unconquerable, and that he could eaſily overtake any man who ſhould offend him.

"This rhinoceros, at the age of two years, was not taller than a young cow that has never produced. But his body was very long and very thick. His head was diſproportionally large. From the ears to the horn there is a concavity, the two extremities of which, namely the upper end of the muzzle, and the part near the ears, are conſiderably raiſed. The horn, which was not yet above an inch high, was black, ſmooth at the top, but full of wrinkles directed backward at the baſe. The noſtrils are ſituated very low, being not above an inch diſtant from the opening of the mouth. The under lip is pretty ſimilar to that of the ox; but the upper lip has a greater reſemblance to that of the horſe, with this advantageous difference, that the rhinoceros can lengthen this lip, move it from ſide to ſide, roll it about a ſtaff, and ſeize with it any object he wiſhes to carry to his mouth. The tongue of this young rhinoceros was ſoft, like that of a calf. His eyes had no vivacity: In figure they reſembled thoſe of the hog, and were ſituated lower, or nearer the noſtrils, than in any other quadruped. His ears are large, thin at the extremities, and contracted at their origin by a kind of annular rugoſity. The neck is very ſhort, and ſurrounded with two large folds of ſkin. The ſhoulders are very thick, and at their junćture there is another fold of ſkin, which deſcends upon the fore legs. The body of this young rhinoceros was very thick, and pretty much reſembled that of a cow about to bring forth. Between the body and crupper there is another fold, which deſcends upon the hind legs. Laſtly, another fold tranſverſely ſurrounds the inferior part of the crupper, at ſome diſtance from the tail. The belly was large, and hung near the ground, particularly its middle part. The legs are round, thick, ſtrong, and

(A) "Their food in a ſtate of nature is the groſſeſt herbs, as thiſtles and thorny ſhrubs, which they prefer to the ſoft paſture of the beſt meadows; they are fond of the ſugar cane, and eat all kinds of grain, but for fleſh they have no appetite."

Rhinoceros

their joint bended backward. The joint, which, when the animal lies, is covered with a remarkable fold of the ſkin, appears when he runs. The tail is thin, and proportionally ſhort; that of the rhinoceros ſo often mentioned, exceeded not 16 or 18 inches in length. It turns a little thicker at the extremity, which is garniſhed with ſome ſhort, thick, hard hairs. The form of the penis is very extraordinary. It is contained in a prepuce, or ſheath like that of the horſe; and the firſt thing that appears in the time of erection is a ſecond prepuce, of a fleſh-colour, from which there iſſues a hollow tube, in the form of a funnel cut and bordered somewhat like a flower-de-luce, and conſtitutes the glans and extremity of the penis. This anomalous glans is of a paler fleſh colour than the ſecond prepuce. In the moſt vigorous erection, the penis extends not above eight inches out of the body; and it is eaſily procured by rubbing the animal with a handful of ſtraw when he lies at his eaſe. The direction of this organ is not ſtraight, but bended backward. Hence he throws out his urine behind, and from this circumſtance, it may be inferred that the male covers not the female, but that they unite with their cruppers to each other. The female organs are ſituated like thoſe of the cow; and ſhe exactly reſembles the male in figure and groſſneſs of body. The ſkin is ſo thick and impenetrable, that when a man lays hold of any of the folds, he would imagine he is touching a wooden plank of half an inch thick (a). When tanned, Dr. Grew remarks, it is exceſſively hard, and thicker than the hide of any other terreſtrial animal. It is everywhere covered more or leſs with incruſtations in the form of galls or tuberoſities, which are pretty ſmall on the top of the neck and back, but become larger on the ſides. The largeſt are on the ſhoulders and crupper, are ſtill pretty large on the thighs and legs, upon which they are ſpread all round, and even on the feet. But between the folds the ſkin is penetrable, delicate, and as ſoft to the touch as ſilk, while the external part of the fold is equally hard with the reſt. This tender ſkin between the folds is of a light fleſh colour; and the ſkin of the belly is nearly of the ſame colour and conſiſtence. Theſe galls or tuberoſities ſhould not be compared, as ſome authors have done, to ſcales. They are only ſimple induratiſons of the ſkin without any regularity in their figure or ſymmetry in their reſpective poſitions. The flexibility of the ſkin in the folds enables the rhinoceros to move with facility his head, neck, and members. The whole body, except at the joints, is inflexible, and reſembles a coat of mail. Dr Parſons remarks, that this animal liſtened with a deep and long continued attention to any kind of noiſe; and that, though he was ſleeping, eating, or obeying any other preſſing demands of nature, he raiſed his head, and liſtened till the noiſe ceaſed."

The ſame animals never aſſemble or march together in troops like elephants. Being of a more ſolitary and ſavage diſpoſition, they are more difficult to hunt and to overcome. They never attack man, however, except when they are provoked, when they are very furious and formidable; but as they ſee only before them, and not very sharply, and as they turn with great difficulty, Rhinoceros
they may be eaſily avoided. The ſkin of theſe animals is ſo extremely hard as to reſiſt ſabres, lances, javelins, and even muſket balls, the only penetrable parts being the belly, the eyes, and about the ears. Hence the hunters generally attack them when they lay down to ſleep.—Their fleſh is conſidered as excellent by the Indians and Africans, but eſpecially by the Hottentots; and if they were trained when young, they might be rendered domeſtic, in which caſe they would multiply more eaſily than the elephant. They inhabit Bengal, Siam, Cochin-China, Quinagh in China, the iſles of Java and Sumatra, Congo, Angola, Ethiopia, and the country as low as the Cape. They love ſhady foreſts, the neighbourhood of rivers, and marſhy places. They wallow in the mire like hogs, and are ſaid by that means to give ſhelter in the folds of their ſkins to ſcorpions, centipedes, and other inſects. This is denied by Buffon and Edwards, though the ſurgeon of the Shafteſbury had obſerved in a rhinoceros, newly taken after having weltered in the mud, ſeveral inſects concealed under the ply of the ſkin. This carries with it every appearance of probability; for as the creature welters in mud, it is impoſſible for it to do ſo without bringing up with it ſome of the inſects which live in that mud; and when this is the caſe, it ſurely cannot be unnatural to ſuppoſe that they would ſhelter themſelves under the plaits of the ſkin. Mr Bruce had an opportunity of examining the ſkin of a rhinoceros before his muddy covering had been ſcraped off, and ſaw under it ſeveral very large worms, but not of the carnivorous kind. He ſaw likewiſe ſeveral ſmaller animals reſembling ear-wigs, which he took to be young ſcolopendræ; and, though he ſearched no farther, we muſt certainly conſider this as a proof of what the ſurgeon of the Shafteſbury related. Mr Bruce ſuppoſes, too, that they welter in mire, partly in order to ſcreen themſelves by a caſe of mud from the attacks of that miſchievous fly which infeſts the animals of Abyſſinia to ſuch a degree. "The time of the fly (ſays he) being in the rainy ſeaſon, the whole black earth turns into mire. In the night, when the fly is at reſt, the rhinoceros chooſes a convenient place, and there, rolling himſelf in the mud, he clothes himſelf with a kind of caſe, which defends him againſt his enemy the following day. The wrinkles and plaits of his ſkin ſerve to keep this muddy platter firm upon him, all but about his hips, ſhoulders, and legs, where it cracks and falls off by motion, and leaves him expoſed in theſe places to the attacks of the fly. The itching and pain which follow occaſion him to rub himſelf in thoſe parts againſt the rougheſt tree; and this is at leaſt one cauſe of the pimples or tubercles which we ſee upon theſe places, both in the elephant and rhinoceros." They bring forth only one young at a time, about which they are very ſolicitous. They are ſaid to comfort with tygers; a ſtory founded merely on their common attachment to the ſides of rivers, by which means they are often found near each other. Their ſkin, fleſh, hoofs, teeth, and even dung, are uſed in India medicinally. The horn, eſpecially that of a virgin rhinoceros, is conſidered as an antidote againſt poiſon. Every horn,

(a) This Mr Bruce denies to be the caſe, and ſuſpects, where it does occur, that it is the effect of diſeaſe, or of a different habit acquired by keeping. In their natural ſtate, he thinks they prevent this rigidity by wallowing in the mud.

Rhinoceros horn, however, has not this property; ſome of them ſelling very cheap, while others are extremely dear.

Some writers are of opinion, that the rhinoceros is the unicorn of holy writ and of the ancients, and that the oryx or Indian aſs of Ariſtotle, who ſays it has but one horn, was the ſame, his informers comparing the clumſy ſhape of the rhinoceros to that of the aſs.—It was alſo the *bos unicornis* and *fera monoceros* of Pliny, both of which were of India; and in his account of the monoceros he exactly deſcribes the great black horn and hog-like tail. The unicorn of Scripture is conſidered as having all the properties of the rhinoceros, as rage, untameableneſs, great ſwiftneſs, and vaſt ſtrength. This opinion is moſt ably ſupported by Mr Bruce. "The derivation of the Hebrew word *reem* (ſays he, which in our verſion is tranſlated *unicorn*, both in the Hebrew and the Ethiopic, ſeems to be from erectneſs, or ſtanding ſtraight. This is certainly no particular quality in the animal itſelf, who is not more or even ſo much erect as many other quadrupeds, for in its knees it is rather crooked; but it is from the circumſtance and manner in which its horn is placed. The horns of all other animals are inclined to ſome degree of parallelism with his noſe or os frontis. The horn of the rhinoceros is erect and perpendicular to this bone, on which it ſtands at right angles, thereby poſſeſſing a greater purchaſe or power, as a lever, than an horn could poſſibly have in any other poſition. The ſituation of the horn is very happily alluded to in Scripture; 'My horn ſhalt thou exalt like the horn of an unicorn.' And the horn here alluded to is not wholly figurative, but was really an ornament worn by great men in the days of victory, preferment, or rejoicing, when they were anointed with new, ſweet, or freſh oil; a circumſtance which David joins with that of erecting the horn.

"Some authors, for what reaſon I know not, have made the reem, or unicorn, to be of the deer or antelope kind; that is, of a genus whoſe very character is fear and weakneſs, directly oppoſite to the qualities by which the reem is deſcribed in Scripture: beſides, it is plain that the reem is not of the claſs of clean quadrupeds; and a late modern traveller very whimſically takes him for the leviathan, which certainly was a fiſh. Balaam, a prieſt of Midian, and ſo in the neighbourhood of the haunts of the rhinoceros, and intimately connected with Ethiopia, (for they themſelves were ſhepherds of that country), in a tranſport, from contemplating the ſtrength of Iſrael, whom he was brought to curſe, ſays, they had, as it were, the ſtrength of the reem. Job makes frequent alluſion to his great ſtrength, ferocity, and indocility. He aſks, 'Will the reem be willing to ſerve thee, or abide by thy crib?' that is, Will he willingly come into thy ſtable, and eat at thy manger? And again, 'Canſt thou bind the reem with a band in the furrow; and will he harrow the valleys for thee?'—In other words, Canſt thou make him go to the plough or harrows?

"The rhinoceros, in Geez, is called *Arwe Harich*, and in the Amharic *Aurarıs*; both which names ſignify 'the large wild beaſt with the horn.' This would ſeem as if applied to the ſpecies with one horn. On the other hand, in the country of the Shangalla and in Nubia he is called *Girnamgirn*, or 'horn upon horn;' and this would Rhinoceros ſeem to denote that he had two. The Ethiopic text renders the word *reem*, 'Arwe-Harich;' and this the Septuagint tranſlates *monoceros*, or *unicorn*. The principal reaſon of tranſlating the word *unicorn* rather than *rhinoceros*, is from a prejudice that he muſt have had but one horn. But this is by no means ſo well founded as to be admitted the only argument for eſtabliſhing the exiſtence of an animal, which never has appeared after the ſearch of ſo many ages. Scripture ſpeaks of the horns of the unicorn; ſo that even from this circumſtance the reem may be the rhinoceros, as the Aſiatic, and part of the African rhinoceros, may be the unicorn."

The rhinoceros bicornis was long known in Europe merely by the double horns which were preſerved in various cabinets; and its exiſtence, though now paſt all doubt, has been frequently queſtioned. Dr Sparman, in his voyage to the Cape of Good Hope, killed two of theſe animals, which he diſſected, and very minutely deſcribes. The horns, he ſays, in the live animal, are ſo mobile and looſe, that when it walks careleſsly along, one may ſee them waggle about, and hear them claſh and clatter againſt each other. In the Phil. Tranſ. for 1793, we have a deſcription of the double-horned rhinoceros of Sumatra, by Mr Bell, ſurgeon in the ſervice of the Eaſt India Company at Bencoolen; and this account, though it differs conſiderably from that of Sparman in ſome particulars, we ſhall inſert here. "The animal (ſays Mr Bell) herein deſcribed was ſhot with a leaden ball from a muſket about ten miles from Fort Marlborough. I ſaw it the day after; it was then not in the leaſt putrid, and I put it into the poſition from which the accompanying drawing was made. (See Plate ccccxxxviii.) It was a male; the height at the ſhoulder was 4 feet 4 inches; at the ſacrum nearly the ſame; from the tip of the noſe to the end of the tail eight feet five inches.—From the appearance of its teeth and bones it was but young, and probably not near its full ſize. The ſhape of the animal was much like that of the hog. The general colour was a browniſh aſh; under the belly, between the legs and folds of the ſkin, a dirty fleſh colour. The head much reſembled that of the ſingle-horned rhinoceros; the eyes were ſmall, of a brown colour; the *membrana nictitans* thick and ſtrong: the ſkin ſurrounding the eyes was wrinkled; the noſtrils were wide; the upper lip was pointed, and hanging over the under.

"There were ſix *molares* or grinders, on each ſide of the upper and lower jaw, becoming gradually larger backward, particularly in the upper; two teeth in the front of each jaw; the tongue was quite ſmooth; the ears were ſmall and pointed, lined and edged with ſhort black hair, and ſituated like thoſe of the ſingle-horned rhinoceros. The horns were black, the larger was placed immediately above the noſe, pointing upwards, and was bent a little back; it was about nine inches long. The ſmall horn was four inches long, of a pyramidal ſhape, flattened a little, and placed above the eyes, rather a little more forward, ſtanding in a line with the larger horn, immediately above it. They were both firmly attached to the ſkull, nor was there any appearance of joint or muſcles to move them (c). The neck was thick and ſhort, the ſkin on the under ſide thrown into

(c) Mr Bruce, however, ſays, that in the living animal the horns are extremely ſenſible. He informs us, that

...ridges, and their folds again wrinkled. The body ... the shoulder to the ... the middle-horned rhinoceros, though it ... The ... in the body and ... have ... the appearance of armour: the ... parts ... ; the ... and ... of a blackish colour, which ... half ... one, on the ... the others on each ... The ... the feet were convex, of a light colour, and the cuticle on them not thicker than that on the feet of a man who is used to walking; the testicles hardly appeared externally; the penis was bent backward, and opened about 18 inches below the anus. At its origin it was as thick as a man's leg, and about two feet and a half long; the bend in it occasions the urine to be discharged backwards. The glans is very singular; the opening of the urethra is like the mouth of a cup with its brim bending over a little, and is about three quarters of an inch in diameter; the glans here is about half an inch in diameter, and continues that thickness for an inch and a half: it is then inserted into another cup like the first, but three times as large; the glans afterwards gradually becomes thicker, and at about nine inches from the opening of the urethra are placed two bodies on the upper part of the glans, very like the nipples of a milch-cow, and as large; these become turgid when the penis is erected; the whole of this is contained in the prepuce, and may be considered as glans. From the os pubis arises a strong muscle, which soon becomes tendinous: this tendon is continued along the back or upper part of the penis; it is flattened, is about the size of a man's little finger, and is inserted into the upper part of the glans, near the end. The use of this muscle is to straiten the penis. On the under side of the penis there are two muscles, antagonists to the above; they arise from the os ischium fleshy, run along the lower side of the penis, on each side of the corpus spongiosum, and are inserted fleshy into the lower side of the glans; the action of these muscles will draw in the penis, and bend it. The male has two nipples, like the female, situated between the hind legs; they are about half an inch in length, of a pyramidal form, rounded at the end.

"The whole skin of the animal is rough, and covered very thinly with short black hair. The skin was not more than one third of an inch in thickness at the strongest part; under the belly it was hardly a quarter of an inch; any part of it might be cut through with ease by a common dissecting knife. The animal had not that appearance of armour which is observed in the single-horned rhinoceros. Since I dissected the male, I have had an opportunity of examining a female, which was more of a lead colour: it was younger than the male, and had not so many folds or wrinkles in its skin; of course it had still less the appearance of armour. The only external mark which distinguishes it from the male is the vagina, which is close to the anus; whereas in the male the opening for the penis is 18 inches below the anus."

From the difference between this account and Sparrman's, which in some particulars is considerable, and from the discrepancy of shape, we are disposed to think them varieties. Mr Bruce's drawing of the rhinoceros bicornis is unquestionably a deception; the body of the animal, as there represented, corresponds exactly with that of the unicornis except in its having two horns on its head. In the museum of the late Dr William Hunter, the two-horned animal was preserved, agreeing exactly with the general accounts and figures we have of that animal, but differing essentially from Mr Bruce's. For further particulars respecting these curious animals, we refer to Buffon, vol. vi. p. 92—117; Sparman's Voyage to the Cape, vol. ii. chap. 12.; and Bruce's Travels, vol. iv. p. 296, &c. and Appendix, p. 85, &c.

Rhinoceros Bird. See Buceros.

RHITYMNA. See Retimo.

RHIZOBALUS, in botany: A genus of the tetragynia order, belonging to the polyandria class of plants; and in the natural method ranking under the 23d order, *Tricoccæ*. The calyx monophyllous, fleshy, and downy; the corolla consists of five petals, which are round, concave, fleshy, and much larger than the calyx; the stamina are very numerous, filiform, and longer than the corolla; the styli are four, filiform, and of the length of the stamina; the pericarpium has four drupæ, kidney-shaped, compressed with a fleshy substance inside, and in the middle a flat large nut containing a kidney-shaped kernel. Of this there is only one species, viz. *Pekia*. The nut is sold in the shops as American nuts; they are flat, tuberculated, and kidney-shaped, containing a kernel of the same shape, which is sweet and agreeable. Clusius gives a good figure of the nut, and Aublet has one of the whole plant.

RHIZOPHORA, the MANGROVE, or *Mangle*, in botany: A genus of the monogynia order, belonging to the decandria class of plants; and in the natural method ranking under the 12th order, *Holoraceæ*. The calyx is quadripartite, the corolla partite; there is one seed, very long, and carnous at the base. These plants are natives of the East and West Indies, and often grow 40 or 50 feet high. They grow only in water and on the banks of rivers, where the tide flows up twice a-day. They preserve the verdure of their leaves throughout the year. From the lowest branches issue long roots, which hang down to the water, and penetrate into the earth. In this position they resemble so many arcades, from five to ten feet high, which serve to support the body of the tree, and even to advance it daily into the bed of the water. These arcades are so closely intertwisted one with another, that they form a kind of natural and transparent terrace, raised with such solidity over the water, that one might walk upon them, were it not that the branches are too much encumbered with leaves. The most natural way of propagating these trees, is to suffer the several slender small filaments which issue from the main branches to take root in the earth. The most common method, however, is that of laying the small lower branches in baskets of mould or earth till they have taken root.

The description just given pertains chiefly to a particular species of mangrove, termed by the West Indians

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that once at a hunting match he saw the point of a rhinoceros's horn broken off by a musket-shot; the consequence of which was, that the creature was for a moment deprived of all appearance of life.

Plate CCCCXXXII.

Rhinoceros Bicornis.

Unicornis.

Thackara sc.

Rhizophora, Rhodes.

dians *black mangles*, on account of the brown dusky colour of the wood. The bark is very brown, smooth, pliant when green, and generally used in the West India islands for tanning of leather. Below this bark lies a cuticle, or skin, which is lighter, thinner, and more tender. The wood is nearly of the same colour as the bark; hard, pliant, and very heavy. It is frequently used for fuel, for which purpose it is said to be remarkably proper: the fires which are made of this wood being both clearer, more ardent and durable than those made of any other materials whatever.—The wood is compact; almost incorruptible; never splinters; is easily worked; and were it not for its enormous weight, would be commodiously employed in almost all kinds of work, as it possesses every property of good timber. To the roots and branches of mangroves that are immersed in the water, oysters frequently attach themselves; so that wherever this curious plant is found growing on the sea-shore, oyster-fishing is very easy; as in such cases these shell-fish may be literally said to be gathered upon trees.

The red mangle or mangrove grows on the sea-shore, and at the mouth of large rivers; but it does not advance, like the former, into the water. It generally rises to the height of 20 or 30 feet, with crooked, knotty branches, which proceed from all parts of the trunk. The bark is slender, of a brown colour, and, when young, is smooth, and adheres very closely to the wood; but when old, appears quite cracked, and is easily detached from it. Under this bark is a skin as thick as parchment, red, and adhering closely to the wood, from which it cannot be detached till the tree is felled and dry. The wood is hard, compact, heavy, of a deep red, with a very fine grain. The pith or heart of the wood being cut into small pieces, and boiled in water, imparts a very beautiful red to the liquid, which communicates the same colour to wool and linen. The great weight and hardness of the wood prevents it from being generally used. From the fruit of this tree, which, when ripe, is of a violet colour, and resembles some grapes in taste, is prepared an agreeable liquor, much esteemed by the inhabitants of the Caribbee islands.

White mangle, so termed from the colour of its wood, grows, like the two former, upon the banks of rivers, but is seldom found near the sea. The bark is grey; the wood, as we have said, white, and when green, supple; but it dries as soon as cut down, and becomes very light and brittle. This species is generally called *rope-mangrove*, from the use to which the bark is applied by the inhabitants of the West Indies. This bark, which, by reason of the great abundance of sap, is easily detached when green from the wood, is beaten or bruised betwixt two stones, until the hard and woody part is totally separated from that which is soft and tender. This last, which is the true cortical substance, is twisted into ropes of all sizes, which are exceedingly strong, and not apt to rot in the water.

1 Ancient names and etymology.

RHODES, a celebrated island in the Archipelago, the largest and most easterly of the Cyclades, was known in ancient times by the names of *Asteria*, *Ophiusa*, *Aethrœa*, *Trinacria*, *Corymbia*, *Possa*, *Atabyria*, *Marcia*, *Oloessa*, *Stadia Telchinis*, *Pelagia*, and *Rhodus*. In later ages, the name of *Rhodas*, or *Rhodes*, prevailed, from the Greek word *rhodon*, as is commonly supposed, signifying a "rose;" the island abounding very much with these flowers. Others, however, give different etymologies, among which it is difficult to find one preferable to another. It is about 20 miles distant from the coasts of Lycia and Caria, and about 120 miles in compass. Rhodes.

2 Its origin.

Several ancient authors assert, that Rhodes was formerly covered by the sea, but gradually raised its head above the waves, and became an island. Delos and Rhodes (says Pliny), islands which have long been * celebrated, sprung at first from the sea. The same fact is supported by such a variety of other evidence as render it indubitable. Philo † ascribes the event to the decrease of the waters of the ocean. If his conjecture be not without foundation, most of the isles of the Archipelago, being lower than Rhodes, must have had a similar origin. But it is much more probable that the volcanic fires, which in the fourth year of the 135th Olympiad, raised Therasia and Thera, known at present by the name of *Santorin*, from the depths of the sea, and have in our days thrown out several small islands adjacent, also produced in some ancient era Rhodes and Delos.

* Pliny, lib. 2. cap. 87.

† Philo de Mundo.

3 First inhabitants.

The first inhabitants of Rhodes, according to Diodorus Siculus, were called the *Telchinæ*, who came originally from the island of Crete. These, by their skill in astrology, perceiving that the island was soon to be drowned with water, left their habitations, and made room for the Heliades, or grandsons of Phœbus, who took possession of the island after that god had cleared it from the water and mud with which it was overwhelmed. These Heliades, it seems, excelled all other men in learning, and especially in astrology; invented navigation, &c. In after ages, however, being infested with great serpents which bred in the island, they had recourse to an oracle in Delos, which advised them to admit Phorbas, a Thessalian, with his followers, into Rhodes. This was accordingly done; and Phorbas having destroyed the serpents, was, after his death, honoured as a demigod. Afterwards a colony of Cretans settled in some part of the island, and a little before the Trojan war, Tlepolinius the son of Hercules, who was made king of the whole island, and governed with great justice and moderation.

4 Driven out by the Dorians.

After the Trojan war, all the ancient inhabitants were driven out by the Dorians, who continued to be masters of the island for many ages. The government was at first monarchical; but a little before the expedition of Xerxes into Greece, a republican form of government was introduced; during which the Rhodians applied themselves to navigation, and became very powerful by sea, planting several colonies in distant countries. In the time of the Peloponnesian war, the republic of Rhodes was rent in two factions, one of which favoured the Athenians, and another the Spartans; but at length the latter prevailing, democracy was abolished, and an aristocracy introduced. About 351 B. C. we find the Rhodians oppressed by Mausolus king of Caria, and at last reduced by Artemisia his widow. In this emergency, they applied to the Athenians; by whose assistance, probably, they regained their liberty.

5 Submit to Alexander, but revolt after his death.

For this time to that of Alexander the Great, the Rhodians enjoyed an uninterrupted tranquillity. To him they voluntarily submitted; and were on that account

...ed by Ptolemy favoured by fortune; but no ſooner did they ...ſert the earth, than they drive out the Macedonian ...garriſon, and reſtore the city to its free people. About ...the time of the ſiege of Rhodes; ...violent ſtorm of rain, ...and lightning, ...ready to fall, and ...the inhabitants. ...As the city was ...the form of an amphitheatre, ...ſtruction to clear the pipes and conduits which conveyed the water into the ſea, the lower parts of the city were in an inſtant laid under water, ſeveral houſes quite covered, and the inhabitants drowned before they could get to the higher places. As the deluge increaſed, and the violent ſhowers continued, ſome of the inhabitants made to their ſhips, and abandoned the place, while others miſerably periſhed in the waters. But while the city was thus threatened with utter deſtruction, the wall on a ſudden burſt aſunder, and the water diſcharging itſelf by a violent current into the ſea, unexpectedly delivered the inhabitants from all danger.

6 Violent ſtorm of rain and lightning.

The Rhodians ſuffered greatly by this unexpected accident, but ſoon retrieved their loſſes by a cloſe application to trade. During the wars which took place among the ſucceſſors of Alexander, the Rhodians obſerved a ſtrict neutrality; by which means they enriched themſelves ſo much, that Rhodes became one of the moſt opulent ſtates of that age; inſomuch that, for the common good of Greece, they undertook the *piratic war*, and, at their own charge, cleared the ſeas of the pirates who had for many years infeſted the coaſts of Europe and Aſia. However, notwithſtanding the neutrality they profeſſed, as the moſt advantageous branches of their commerce were derived from Egypt, they were more attached to Ptolemy, king of that country, than to any of the neighbouring princes. When therefore Antigonus, having engaged in a war with Ptolemy about the iſland of Cyprus, demanded ſuccours of them, they earneſtly intreated him not to compel them to declare war againſt their ancient friend and ally. But this anſwer, prudent as it was, drew upon them the diſpleaſure of Antigonus, who immediately ordered one of his admirals to ſail with his fleet to Rhodes, and ſeize all the ſhips that came out of the harbour for Egypt. The Rhodians, finding their harbour blocked up by the fleet of Antigonus, equipped a good number of galleys, fell upon the enemy, and obliged him, with the loſs of many ſhips, to quit his ſtation. Hereupon Antigonus, charging them as aggreſſors, and beginners of an unjuſt war, threatened to beſiege their city with the ſtrength of his whole army. The Rhodians endeavoured by frequent embaſſies to appeaſe his wrath; but all their remonſtrances ſerved rather to provoke than allay his reſentment: and the only terms upon which he would hearken to any accommodation were, that the Rhodians ſhould declare war againſt Ptolemy, that they ſhould admit his fleet into their harbour, and that an hundred of the chief citizens ſhould be delivered up to him as hoſtages for the performance of theſe articles. The Rhodians ſent ambaſſadors to all their allies, and to Ptolemy in particular, imploring their aſſiſtance, and repreſenting to the latter, that their attachment to his intereſt had drawn upon them the danger to which they were expoſed. The preparations on both ſides were immenſe. As Antigonus was near fourſcore years of age at that time, he committed the whole management of the war to his ſon Demetrius, who appeared before the city of Rhodes with 200 ſhips of war, 170 tranſports having on board 40,000 men, and 1000 other veſſels laden with proviſions and all ſorts of warlike engines. As Rhodes had enjoyed for many years a profound tranquillity, and been free from all devaſtations, the expectation of booty, in the pound of ſo wealthy a city, allured multitudes of perſons and mercenaries to join Demetrius in this expedition; inſomuch that the whole ſea between the continent and the iſland was covered with ſhips; which ſtruck the Rhodians, who had a proſpect of this mighty armada from the walls, with great terror and conſternation.

7 Difference with Antigonus.

Rhodes beſieged by Demetrius.

Demetrius, having landed his troops without the reach of the enemy's machines, detached ſeveral ſmall bodies to lay waſte the country round the city, and cut down the trees and groves, employing the timber, and materials of the houſes without the walls, to fortify his camp with ſtrong ramparts and a treble paliſade; which work, as many hands were employed, was finiſhed in a few days. The Rhodians, on their part, prepared for a vigorous defence. Many great commanders, who had ſignalized themſelves on other occaſions, threw themſelves into the city, being deſirous to try their ſkill in military affairs againſt Demetrius, who was reputed one of the moſt experienced captains in the conduct of ſieges that antiquity had produced. The beſieged began with diſmiſſing from the city all ſuch perſons as were uſeleſs; and then taking an account of thoſe who were capable of bearing arms, they found that the citizens amounted to 6000, and the foreigners to 1000. Liberty was promiſed to all the ſlaves who ſhould diſtinguiſh themſelves by any glorious action, and the public engaged to pay the maſters their full ranſom. A proclamation was likewiſe made, declaring, that whoever died in defence of their country ſhould be buried at the expence of the public; that his parents and children ſhould be maintained out of the treaſury; that fortunes ſhould be given to his daughters; and his ſons, when they were grown up, ſhould be crowned and preſented with a complete ſuit of armour at the great ſolemnity of Bacchus; which decree kindled an incredible ardour in all ranks of men.

9 The inhabitants prepare for a vigorous defence.

Demetrius, having planted all his engines, began to batter with incredible fury the walls on the ſide of the harbour; but was for eight days ſucceſſively repulſed by the beſieged, who ſet fire to moſt of his warlike engines, and thereby obliged him to allow them ſome reſpite, which they made good uſe of in repairing the breaches, and building new walls where the old ones were either weak or low. When Demetrius had repaired his engines, he ordered a general aſſault to be made, and cauſed his troops to advance with loud ſhouts, thinking by this means to ſtrike terror into the enemy. But the beſieged were ſo far from being intimidated, that they repulſed the aggreſſors with great ſlaughter, and performed the moſt aſtoniſhing feats of bravery. Demetrius returned to the aſſault next day; but was in the ſame manner forced to retire, after having loſt a great number of men, and ſome officers of diſtinction. He had ſeized, at his firſt landing, an eminence at a ſmall diſtance from the city; and, having fortified this advantageous poſt, he cauſed ſeveral batteries to be erected there, with engines, which inceſſantly diſcharged

10 Engines of Demetrius burnt.

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againſt the walls ſtones of 150 pounds weight. The towers, being thus furiouſly battered night and day, began to totter, and ſeveral breaches were opened in the walls: but the Rhodians, unexpectedly ſallying out, drove the enemy from their poſt, everturned their machines, and made a moſt dreadful havock; inſomuch that ſome of them retired on board their veſſels, and were with much ado prevailed upon to come aſhore again.

22 Several deſperate aſſaults without ſucceſs.

Demetrius now ordered a ſcalade by ſea and land at the ſame time; and ſo employed the beſieged, that they were at a loſs what place they ſhould chiefly defend. The attack was carried on with the utmoſt fury on all ſides, and the beſieged defended themſelves with the greateſt intrepidity. Such of the enemy as advanced firſt were thrown down from the ladders, and miſerably bruiſed. Several of the chief officers, having mounted the walls to encourage the ſoldiers by their example, were there either killed or taken priſoners. After the combat had laſted many hours, with great ſlaughter on both ſides, Demetrius, notwithſtanding all his valour, thought it neceſſary to retire, in order to repair his engines, and give his men ſome days reſt.

Demetrius being ſenſible that he could not reduce the city till he was maſter of the port, after having refreſhed his men, he returned with new vigour againſt the fortifications which defended the entry into the harbour. When he came within the caſt of a dart, he cauſed a vaſt quantity of burning torches and firebrands to be thrown into the Rhodian ſhips, which were riding there; and at the ſame time galled, with dreadful ſhowers of darts, arrows, and ſtones, ſuch as offered to extinguiſh the flames. However, in ſpite of their utmoſt efforts, the Rhodians put a ſtop to the fire; and, having with great expedition manned three of their ſtrongeſt ſhips, drove with ſuch violence againſt the veſſels on which the enemy's machines were planted, that they were ſhattered in pieces, and the engines diſmounted and thrown into the ſea. Exceſtus the Rhodian admiral, being encouraged by this ſucceſs attacked the enemy's fleet with his three ſhips, and ſunk a great many veſſels; but was himſelf at laſt taken priſoner: the other two veſſels made their eſcape, and regained the port.

As unfortunate as this laſt attack had proved to Demetrius, he determined to undertake another; and, in order to ſucceed in his attempt, he ordered a machine of a new invention to be built, which was thrice the height and breadth of thoſe he had lately loſt. When the work was finiſhed, he cauſed the engine to be placed near the port, which he was reſolved, at all adventures, to force. But as it was upon the point of entering the harbour, a dreadful ſtorm ariſing, drove it againſt the ſhore, with the veſſels on which it had been reared. The beſieged, who were attentive to improve all favourable conjunctures, while the tempeſt was ſtill raging, made a ſally againſt thoſe who defended the eminence mentioned above; and, though repulſed ſeveral times, carried it at laſt, obliging the Demetrians, to the number of 400, to throw down their arms and ſubmit. After this victory gained by the Rhodians, there arrived to their aid 150 Gnoſſians, and 500 men ſent by Ptolemy from Egypt, moſt of them being natives of Rhodes, who had ſerved among the king's troops.

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Demetrius being extremely mortified to ſee all his batteries againſt the harbour rendered ineffectual, reſolved to employ them by land, in hopes of carrying the city by aſſault, or at leaſt reducing it to the neceſſity of capitulating. With this view, having got together a vaſt quantity of timber and other materials, he framed the famous engine called *helepolis*, which was by many degrees larger than any that had ever been invented before. Its baſis was ſquare, each ſide being in length near 50 cubits, and made up of ſquare pieces of timber, bound together with plates of iron. In the middle part he placed thick planks, about a cubit diſtant from each other; and on theſe the men were to ſtand who forced the engine forward. The whole was moved upon eight ſtrong and large wheels whoſe felloes were ſtrengthened with ſtrong iron plates. In order to facilitate and vary the movements of the helepolis, caſters were placed under it, whereby it was turned in an inſtant to what ſide the workmen and engineers pleaſed. From each of the four angles a large pillar of wood was carried to about the height of 100 cubits, and inclining to each other; the whole machine conſiſting of nine ſtories, whoſe dimenſions gradually leſſened in the aſcent. The firſt ſtory was ſupported by 43 beams, and the laſt by no more than nine. Three ſides of the machine were plated over with iron, to prevent its being damaged by the fire that might be thrown from the city. In the front of each ſtory were windows of the ſame ſize and ſhape as the engines that were to be diſcharged from thence. To each window were ſhutters, to draw up for the defence of thoſe who managed the machines, and to deaden the force of the ſtones thrown by the enemy, the ſhutters being covered with ſkins ſtuffed with wool. Every ſtory was furniſhed with two large ſtaircaſes, that whatever was neceſſary might be brought up by one, while others were going down by the other, and ſo every thing might be diſpatched without tumult or confuſion. This huge machine was moved forwards by 3000 of the ſtrongeſt men of the whole army; but the art with which it was built greatly facilitated the motion. Demetrius cauſed likewiſe to be made ſeveral teſtudoes or pent-houſes, to cover his men while they advanced to fill up the trenches and ditches; and invented a new ſort of galleries, through which thoſe who were employed at the ſiege might paſs and repaſs at their pleaſure, without the leaſt danger. He employed all his ſeamen in levelling the ground over which the machines were to be brought up to the ſpace of four furlongs. The number of workmen who were employed on this occaſion amounted to 30,000.

12 Demetrius frames a new machine called helepolis.

13 The Rhodians raiſe a new wall.

In the mean time, the Rhodians, obſerving theſe formidable preparations, were buſy in raiſing a new wall within that which the enemy intended to batter with the helepolis. In order to accompliſh this work, they pulled down the wall which ſurrounded the theatre, ſome neighbouring houſes, and even ſome temples, after having ſolemnly promiſed to build more magnificent ſtructures in honour of the gods, if the city were preſerved. At the ſame time, they ſent out nine of their beſt ſhips to ſeize ſuch of the enemy's veſſels as they could meet with, and thereby diſtreſs them for

[illegible] ed without [illegible]

[illegible] ed [illegible] to no purpose.

and the machines played off in so brisk a manner, that a large tower built with square stones, and the wall that flanked it, were battered down. The besieged, nevertheless, fought in the breach with so much courage and resolution, that the enemy, after various unsuccessful attempts, were forced to abandon the enterprise, and retire.

16 The besieged receive a large supply of provisions, and set the enemy's engines on fire.

In this conjuncture, a fleet which Ptolemy had freighted with 300,000 measures of corn, and different kinds of pulse for the use of the Rhodians, arrived very seasonably in the port, notwithstanding the vigilance of the enemy's ships, which cruized on the coasts of the island to surprise them. A few days after came in safe two other fleets, one sent by Cassander, with, 100,000 bushels of barley; the other by Lysimachus, with 400,000 bushels of corn and as many of barley. This seasonable and plentiful supply arriving when the city began to suffer for want of provisions, inspired the besieged with new courage, and raised their drooping spirits. Being thus animated they formed a design of setting the enemy's engines on fire; and with this view ordered a body of men to sally out the night ensuing, about the second watch, with torches and firebrands, having first placed on the walls an incredible number of engines, to discharge stones, arrows, darts, and fire-balls, against those who should attempt to oppose their detachment. The Rhodian troops, pursuant to their orders, all on a sudden sallied out, and advancing, in spite of all opposition, to the batteries, set them on fire, while the engines from the walls played incessantly on those who endeavoured to extinguish the flames. The Demetrians on this occasion fell in great numbers, being incapable, in the darkness of the night, either to see the engines that continually discharged showers of stones and arrows upon them, or to join in one body and repulse the enemy. The conflagration was so great, that several plates of iron falling from the helepolis, that vast engine would have been entirely consumed, had not the troops that were stationed in it with all possible speed quenched the fire with water, before prepared, and ready in the apartments of the engine against such accidents. Demetrius, fearing lest all his machines should be consumed, called together, by sound of trumpet, those whose province it was to move them; and, by their help, brought them off before they were entirely destroyed. When it was day, he commanded all the darts and arrows that had been shot by the Rhodians to be carefully gathered, that he might from their number form some judgement of the number of machines in the city. Above 800 firebrands were found on the spot, and no fewer than 1500 darts, all discharged in a very small portion of the night. This struck the prince himself with no small terror; for he never imagined that they would have been able to bear the charges of such formidable preparations. However, after having caused the slain to be buried, and given directions for the curing of the wounded, he applied himself to the repairing of his machines, which had been dismounted and rendered quite unserviceable.

They build a third wall

In the mean time, the besieged, improving the respite allowed them by the removal of the machines, built a third wall in the form of a crescent, which took in all that part that was most exposed to the enemy's batteries; and, besides, drew a deep trench behind the breach,

[illegible] ed with all expedition, drawn a deep trench all along the wall, began to countermine, and, meeting the enemy under ground, obliged them to abandon the work. While both parties [illegible] the mines, one Athenagoras a Milesian, who had been sent to the assistance of the Rhodians by Ptolemy with a body of mercenaries, promised to betray the city to the Demetrians, and let them in thro' the mines in the night-time. But this was only in order to ensnare them; for Alexander, a noble Macedonian, whom Demetrius had sent with a choice body of troops to take possession of a post agreed on, no sooner appeared, but he was taken prisoner by the Rhodians, who were waiting for him under arms.—Athenagoras was crowned by the senate with a crown of gold, and presented with five talents of silver.

[illegible] Demetrius now gave over all thoughts of undermining the walls, and placed all his hopes of reducing the city in the battering-engines which he had contrived. Having therefore levelled the ground under the walls, he brought up his helepolis, with four testudoes on each side of it. Two other testudoes of an extraordinary size, bearing battering-rams, were likewise moved forwards by 1000 men. Each story of the helepolis was filled with all sorts of engines for discharging of stones, arrows, and darts. When all things were ready, Demetrius ordered the signal to be given; when his men, setting up a shout, assaulted the city on all sides both by sea and land. But, in the heat of the attack, when the walls were ready to fall by the repeated strokes of the battering-rams, ambassadors arrived from Cnidus, earnestly soliciting Demetrius to suspend all further hostilities, and at the same time giving him hopes that they should prevail upon the Rhodians to submit to an honourable capitulation. A suspension of arms was accordingly agreed on, and ambassadors sent from both sides. But the Rhodians refusing to capitulate on the conditions offered them, the attack was renewed with [illegible]

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breach, to prevent the enemy from entering the city that way. At the ſame time, they detached a ſquadron of their beſt ſhips, under the command of Amyntas, who made over to the continent of Aſia; and there meeting with ſome privateers who were commiſſioned by Demetrius, took both the ſhips and the men, among whom were Timocles the chief of the pirates, and ſeveral other officers of diſtinction belonging to the fleet of Demetrius. On their return, they fell in with ſeveral veſſels laden with corn for the enemy's camp, which they likewiſe took, and brought into the port. Theſe were ſoon followed by a numerous fleet of ſmall veſſels loaded with corn and proviſions ſent them by Ptolemy, together with 1500 men, commanded by Antigonus a Macedonian of great experience in military affairs.—Demetrius, in the mean time, having repaired his machines, brought them up anew to the walls; which he inceſſantly battered till he opened a great breach and threw down ſeveral towers. But when he came to the aſſault, the Rhodians, under the command of Aminias, defended themſelves with ſuch reſolution and intrepidity, that he was in three ſucceſſive attacks repulſed with great ſlaughter, and at laſt forced to retire. The Rhodians likewiſe, on this occaſion, loſt ſeveral officers; and amongſt others, the brave Aminias their commander.

Demetrius makes a breach in the walls, but is ſtill repulſed.

While the Rhodians were thus ſignalizing themſelves in the defence of their country, a ſecond embaſſy arrived at the camp of Demetrius from Athens and the other cities of Greece, ſoliciting Demetrius to compoſe matters, and ſtrike up a peace with the Rhodians. At the requeſt of the ambaſſadors, who were in all above 50, a ceſſation of arms was agreed upon; but the terms offered by Demetrius being anew rejected by the Rhodians, the ambaſſadors returned home without being able to bring the contending parties to an agreement. Hoſtilities were therefore renewed; and Demetrius, whoſe imagination was fertile in expedients for ſucceeding in his projects, formed a detachment of 1500 of his beſt troops, under the conduct of Alcimus and Mancius, two officers of great reſolution and experience, ordering them to enter the breach at midnight, and, forcing the entrenchment behind it, to poſſeſs themſelves of the poſts about the theatre, where it would be no difficult matter to maintain themſelves againſt any efforts of the townſmen. In order to facilitate the execution of ſo important and dangerous an undertaking, and amuſe the enemy with falſe attacks, he at the ſame time, upon a ſignal given, ordered the reſt of the army to ſet up a ſhout, and attack the city on all ſides both by ſea and land. By this means he hoped that, the beſieged being alarmed in all parts, his detachment might find an opportunity of forcing the entrenchments which covered the breach, and afterwards of ſeizing the advantageous poſt about the theatre. This feint had all the ſucceſs the prince could expect; for the troops having ſet up a ſhout from all quarters, as if they were advancing to a general aſſault, the detachment commanded by Alcimus and Mancius entered the breach, and fell upon thoſe who defended the ditch, and the wall that covered it, with ſuch vigour, that, having ſlain the moſt part of them and put the reſt in confuſion, they advanced to the theatre, and ſeized on the poſt adjoining to it. This occaſioned a general uproar in the city as if it had been already taken; but the commanding officers diſpatched orders to the ſoldiers on the ramparts not to quit their poſts, nor ſtir from their reſpective ſtations. Having thus ſecured the walls, they put themſelves at the head of a choſen body of their own troops, and of thoſe who were lately come from Egypt, and with theſe charged the enemy's detachment. But the darkneſs of the night prevented them from diſlodging the enemy and regaining the advantageous poſts they had ſeized. Day, however, no ſooner appeared, than they renewed their attack with wonderful bravery. The Demetrians without the walls, with loud ſhouts endeavoured to animate thoſe who had entered the place, and inſpire them with reſolution to maintain their ground till they were relieved with freſh troops. The Rhodians being ſenſible that their fortunes, liberties, and all that was dear to them in the world, lay at ſtake, fought like men in the utmoſt deſpair, the enemy defending their poſts for ſeveral hours without giving ground in the leaſt. At length the Rhodians, encouraging each other to exert themſelves in defence of their country, and animated by the example of their leaders, made a laſt effort, and, breaking into the very heart of the enemy's battalion, there killed both their commanders. After their death the reſt were eaſily put in diſorder, and all to a man either killed or taken priſoners. The Rhodians likewiſe on this occaſion loſt many of their beſt commanders; and among the reſt Damotetis, their chief magiſtrate, a man of extraordinary valour, who had ſignalized himſelf during the whole time of the ſiege.

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But are all killed or taken.

Demetrius, not at all diſcouraged by this check, was making the neceſſary preparations for a new aſſault, when he received letters from his father Antigonus, enjoining him to conclude a peace with the Rhodians upon the beſt terms he could get, leſt he ſhould loſe his whole army in the ſiege of a ſingle town. From this time Demetrius wanted only ſome plauſible pretence for breaking up the ſiege. The Rhodians likewiſe were now more inclined to come to an agreement than formerly; Ptolemy having acquainted them that he intended to ſend a great quantity of corn, and 5000 men to their aſſiſtance, but that he would firſt have them try whether they could make up matters with Demetrius upon reaſonable terms. At the ſame time ambaſſadors arrived from the Ætolian republic, ſoliciting the contending parties to put an end to the war which might involve all the eaſt in endleſs calamities.

An accident which happened to Demetrius in this conjuncture, did not a little contribute towards the wiſhed-for pacification. This prince was preparing to advance his helepolis againſt the city, when a Rhodian engineer found means to render it quite uſeleſs. He undermined the tract of ground over which the helepolis was to paſs the next day in order to approach the walls. Demetrius, not ſuſpecting any ſtratagem of this nature, cauſed the engine to be moved forward, which coming to the place that was undermined, ſunk ſo deep into the ground that it was impoſſible to draw it out again. This misfortune, if we believe Vegetius and Vitruvius, determined Demetrius to hearken to the Ætolian ambaſſadors, and at laſt to ſtrike up a peace upon the following conditions: That the republic of Rhodes ſhould be maintained in the full enjoyment of their ancient rights, privileges, and liberties, without any foreign garriſon; that they ſhould renew their ancient alliance

89 His troops enter the breach;

90 But are all killed or taken.

91 The helepolis rendered uſeleſs.

92 The ſiege raiſed.

Rhodes.

with Antigonus, and assist him in his wars against all states and princes except Ptolemy king of Egypt; and that, for the effectual performance of the articles stipulated between them, they should deliver 100 hostages, such as Demetrius should make choice of, except those who bore any public employment.

Thus was the siege raised, after it had continued a whole year; and the Rhodians amply rewarded all those who had distinguished themselves in the service of their country. They also set up statues to Ptolemy, Cassander, and Lysimachus; to all of whom they paid the highest honours, especially to the first, whom they worshipped as a god. Demetrius at his departure presented them with the helepolis, and all the other machines which he had employed in battering the city; from the sale of which, with some additional sums of their own, they erected the famous colossus. After this they applied themselves entirely to trade and navigation; by which means they became quite masters of the sea, and much more opulent than any of the neighbouring nations. As far as lay in their power, they endeavoured to preserve a neutrality with regard to the jarring nations of the east. However, they could not avoid a war with the Byzantines, the occasion of which was as follows: The Byzantines being obliged to pay a yearly tribute of 80 talents to the Gauls, in order to raise this sum, they came to a resolution of laying a toll on all ships, that traded to the Pontic sea. This resolution provoked the Rhodians, who were a trading nation, above all the rest. For this reason they immediately dispatched ambassadors to the Byzantines, complaining of the new tax; but as the Byzantines had no other method of satisfying the Gauls, they persisted in their resolution. The Rhodians now declared war, and prevailed upon Prusias king of Bithynia, and Attalus king of Pergamus, to assist them; by which confederacy the Byzantines were so intimidated, that they agreed to exact no toll from ships trading to the Pontic sea, the demand which had been the occasion of the war.

23 War with the Byzantines.

24 A dreadful earthquake at Rhodes.

About this time happened a dreadful earthquake, which threw down the colossus, the arsenal, and great part of the city-walls of Rhodes; which calamity the Rhodians improved to their advantage, sending ambassadors to all the Grecian princes and states to whom their losses were so much exaggerated, that their countrymen obtained immense sums of money under pretence of repairing them. Hiero king of Syracuse presented them with 100 talents; and, besides, exempted from all tolls and duties such as traded to Rhodes. Ptolemy king of Egypt gave them 100 talents, a million of measures of wheat, materials for building 20 quinqueremes and the like number of triremes; and, besides, sent them 100 architects, 302 workmen, and materials for repairing their public buildings, to a great value, paying them moreover 24 talents a-year for the maintenance of the workmen whom he sent them. Antigonus gave them 100 talents of silver, with 10,000 pieces of timber, each piece being 16 cubits long; 7000 planks; 3000 pounds of iron, as many of pitch and resin, and 1000 measures of tar. Chryseis, a woman of distinction, sent them 100,000 measures of wheat, and 3000 pounds of lead. Antiochus exempted from all taxes and duties the Rhodian ships trading to his dominions; presented them with 10 galleys, and 200,000 measures of corn, with many other things of great value. Prusias, Mithridates, and all the princes then reigning in Asia, made them proportionable, presents: in short, all the Greek towns and nations, all the princes of Europe and Asia, contributed, according to their ability, to the relief of the Rhodians on that occasion; insomuch that their city not only soon rose from its ruins, but attained to an higher pitch of splendor than ever.

25 War with Philip of Macedon.

In the year 203 B. C. the Rhodians engaged in a war with Philip of Macedon. This monarch had invaded the territories of Attalus king of Pergamus; and because the Rhodians seemed to favour their ancient friend, sent one Heraclides, by birth a Tarentine, to set fire to their fleet; at the same time that he dispatched ambassadors into Crete, in order to stir up the Cretans against the Rhodians, and prevent them from sending any assistance to Attalus. Upon this war was immediately proclaimed. Philip at first gained an inconsiderable advantage in a naval engagement; but the next year was defeated with the loss of 11,000 men, while the Rhodians lost but 60 men and Attalus 70. After this he carefully avoided coming to an engagement at sea either with Attalus or the Rhodians. The combined fleet, in the mean time, sailed towards the island of Ægina in hopes of intercepting him: but having failed in their purpose, they sailed to Athens, where they concluded a treaty with that people; and, on their return, drew all the Cyclades into a confederacy against Philip. But while the allies were thus wasting their time in negociations, Philip, having divided has forces into two bodies, sent one, under the command of Philocles, to ravage the Athenian territories; and put the other aboard his fleet, with orders to sail to Meronea, a city on the north side of Thrace. He then marched towards that city himself with a body of forces, took it by assault, and reduced a great many others; so that the confederates would, in all probability, have had little reason to boast of their success, had not the Romans come to their assistance, by whose help the war was soon terminated to their advantage. In the war which took place between the Romans and Antiochus the Great king of Syria, the Rhodians were very useful allies to the former. The best part of their fleet was indeed destroyed by a treacherous contrivance of Polyxeniades the Syrian admiral; but they soon fitted out another, and defeated a Syrian squadron commanded by the celebrated Hannibal, the Carthaginian commander; after which, in conjunction with the Romans, they utterly defeated the whole Syrian fleet commanded by Polyxeniades; which, together with the loss of the battle of Magnesia, so dispirited Antiochus, that he submitted to whatever conditions the Romans pleased.

26 The Rhodians assisted by the Romans.

For these services the Rhodians were rewarded with the provinces of Lycia and Caria; but tyrannizing over the people in a terrible manner, the Lycians applied to the Romans for protection. This was readily granted; but the Rhodians were so much displeased with their interfering in this matter, that they secretly favoured Perses in the war which broke out between him and the Roman republic. For this offence the two provinces abovementioned were taken from them; but the Rhodians, having banished or put to death those who had favoured Perses, were again admitted into favour,

Rhodes.

vour, and greatly honoured by the ſenate. In the Mithridatic war, their alliance with Rome brought upon them the king of Pontus with all his force; but having loſt the greateſt part of his fleet before the city, he was obliged to raiſe the ſiege without performing any remarkable exploit. In the war which Pompey made on the Cilician pirates, the Rhodians aſſiſted him with all their naval force, and had a great ſhare in the victories which he gained. In the civil war between Cæſar and Pompey, they aſſiſted the latter with a very numerous fleet. After his death they ſided with Cæſar; which drew upon them the reſentment of C. Caſſius, who advanced to the iſlands of Rhodes with a powerful fleet, after having reduced the greateſt part of the continent. The Rhodians, terrified at his approach, ſent ambaſſadors intreating him to make up matters in an amicable manner, and promiſing to ſtand neuter, and recal the ſhips which they had ſent to the aſſiſtance of the triumviri. Caſſius inſiſted upon their delivering up their fleet to him, and putting him in poſſeſſion both of their harbour and city. This demand the Rhodians would by no means comply with, and therefore began to put themſelves in a condition to ſtand a ſiege; but firſt ſent Archelaus, who had taught Caſſius the Greek tongue while he ſtudied at Rhodes, to intercede with his diſciple in their behalf. Archelaus could not, with all his authority, prevail upon him to moderate his demands wherefore the Rhodians, having created one Alexander a bold and enterpriſing man, their prætor or prytanis, equipped a fleet of 33 ſail, and ſent it out under the command of Mnaſeus, an experienced ſea-officer, to offer Caſſius battle. Both fleets fought with incredible bravery, and the victory was long doubtful: but the Rhodians, being at length overpowered by numbers, were forced to return with their fleet to Rhodes; two of their ſhips being ſunk, and the reſt very much damaged by the heavy ſhips of the Romans. This was the firſt time, as our author obſerves, that the Rhodians were fairly overcome in a ſea-fight.

27 Rhodes beſieged by Mithridates without ſucceſs.

28 The Rhodians defeated in two naval engagements by Caſſius.

Caſſius, who had beheld this fight from a neighbouring hill, having refitted his fleet, which had been no leſs damaged than that of the Rhodians, repaired to Loryma, a ſtrong hold on the continent belonging to the Rhodians. This caſtle he took by aſſault; and from hence conveyed his land-forces, under the conduct of Fannius and Lentulus, over into the iſland. His fleet conſiſted of 80 ſhips of war and above 200 tranſports. The Rhodians no ſooner ſaw this mighty fleet appear, but they went out again to meet the enemy. The ſecond engagement was far more bloody that the firſt; many ſhips were ſunk, and great numbers of men killed on both ſides. But victory anew declared for the Romans; who immediately blocked up the city of Rhodes both by ſea and land. As the Rhodians had not had time to furniſh the city with ſufficient ſtore of proviſions, ſome of the inhabitants, fearing that if it were taken either by aſſault or by famine, Caſſius would put all the inhabitants to the ſword, as Brutus had lately done at Xanthus, privately opened the gate to him, and put him in poſſeſſion of the town, which he nevertheleſs treated as if it had been taken by aſſault. He commanded 50 of the chief citizens, who were ſuſpected to favour the adverſe party, to be brought before him, and ſentenced them all to die; others, to the number of 25, who had commanded the fleet or army becauſe they did not appear when ſummoned, he proſcribed. Having thus puniſhed ſuch as had either acted or ſpoken againſt him or his party, he commanded the Rhodians to deliver up to him all their ſhips, and whatever money they had in the public treaſury. He then plundered the temples; ſtripping them of all their valuable furniture, veſſels, and ſtatues. He is ſaid not to have left one ſtatue in the whole city, except that of the ſun; bragging at his departure, that he had ſtripped the Rhodians of all they had, leaving them nothing but the ſun. As to private perſons, he commanded them, under ſevere penalties, to bring to him all the gold and ſilver they had, promiſing by a public crier, a tenth part to ſuch as ſhould diſcover any hidden treaſures. The Rhodians at firſt concealed ſome part of their wealth, imagining that Caſſius intended by this proclamation only to terrify them; but when they found he was in earneſt, and ſeveral wealthy citizens put to death for concealing only a ſmall portion of their riches, they deſired that the time prefixed for the bringing in their gold and ſilver might be prolonged. Caſſius willingly granted them their requeſt; and then through fear they dug up what they had hid under ground, and laid at his feet all they were worth in the world. By this means he extorted from private perſons above 8000 talents. He then fined the city in 500 more; and leaving L. Varus there with a ſtrong garriſon to exact the fine without any abatement, he returned to the continent.

29 Who takes and cruelly pillages the city.

Rhodes.

After the death of Caſſius, Marc Antony reſtored the Rhodians to their ancient rights and privileges; beſtowing upon them the iſlands of Andros, Naxos, Tenos, and the city of Myndus. But theſe the Rhodians ſo oppreſſed and loaded with taxes, that the ſame Antony, though a great friend to the Rhodian republic, was obliged to diveſt her of the ſovereignty over thoſe places, which he had a little before ſo liberally beſtowed upon her. From this time till the reign of the Emperor Claudius we find no mention made of the Rhodians. That prince, as Dion informs us, deprived them of their liberty for having crucified ſome Roman citizens. However, he ſoon reſtored them to their former condition, as we read in Suetonius and Tacitus. The latter adds, that they had been as often deprived of, as reſtored to, their liberty by way of puniſhment or reward for their different behaviour, as they had obliged the Romans with their aſſiſtance in foreign wars, or provoked them with their ſeditions at home. Pliny who wrote in the beginning of Veſpaſian's reign, ſtyles Rhodes a *beautiful and free town*. But this liberty they did not long enjoy, the iſland being ſoon after reduced by the ſame Veſpaſian to a Roman province, and obliged to pay a yearly tribute to their new maſters. This province was called the *province of the iſlands*. The Roman pretor who governed it reſided at Rhodes, as the chief city under his juriſdiction; and Rome, notwithſtanding the eminent ſervices rendered her by this republic, thenceforth treated the Rhodians not as allies, but vaſſals.

30 Rhodes reduced to a Roman province by Veſpaſian.

The iſland of Rhodes continued ſubject to the Romans till the reign of the emperor Andronicus; when Villaret, grand-maſter of the knights of Jeruſalem, then reſiding in Cyprus, finding himſelf much expoſed to the attacks of the Saracens in that iſland, reſolved to exchange it for that of Rhodes. The iſland too was almoſt

31 Expeditions of Villaret grand-maſter of the knights of Jeruſalem againſt Rhodes.

Rhodes. almoſt entirely occupied by the Saracens; Andronicus the eaſtern emperor paſſing little more in it than a title. Nevertheleſs he refuſed to grant the inveſtiture of the iſland to Villaret. The latter, without ſpending time in fruitleſs negociations, ſailed directly for Rhodes, where he landed his troops, proviſions, and warlike ſtores, in ſpite of the oppoſition made by the Saracens, who then united againſt the common enemy. As Villaret foreſaw that the capital muſt be taken before he could reduce the reſt of the iſland, he inſtantly laid ſiege to it. The inhabitants defended themſelves obſtinately, upon which the grand-maſter thought proper to turn the ſiege into a blockade; but he ſoon found himſelf ſo cloſely ſurrounded by the Greeks and Saracens, that he could get no ſupply either of forage or proviſions for his army. But having at length obtained a ſupply of proviſions by means of large ſums borrowed of the Florentines, he came out of his trenches and attacked the Saracens, with a full reſolution either to conquer or die. A bloody fight enſued, in which a great number of the braveſt knights were killed: but at length the Saracens gave way, and fled to their ſhips; upon which the city was immediately aſſaulted and taken. The Greeks and other Chriſtians had their lives and liberties given them, but the Saracens were all cut to pieces. The reduction of the capital was followed by that of all the other places of inferior ſtrength throughout the iſland; and in four years after their landing, the whole was ſubjugated, and the conquerors took the title of the *Knights of Rhodes*. For many years thoſe knights continued the terror of the Saracens and Turks, and ſuſtained a ſevere ſiege from Mohammed II. who was compelled to abandon the enterpriſe; but at length the Turkiſh ſultan Solyman reſolved at all events to drive them from it. Before he undertook the expedition, he ſent a meſſage commanding them to depart the iſland without delay; in which caſe he promiſed that neither they nor the inhabitants ſhould ſuffer any injury, but threatened them with his utmoſt vengeance if they refuſed his offer. The knights, however, proving obſtinate, Solyman attacked the city with a fleet of 400 ſail and an army of 140,000 men.

32 Mohammed II. ſucceeds Solyman.

33 The city beſieged by Solyman.

The trenches were ſoon brought cloſe to the counterſcarp, and a ſtrong battery raiſed againſt the town; which, however, did but little damage, till the ſultan being informed by a ſpy of this particular, and that he was in danger of receiving ſome fatal ſhot from the tower of St John which overlooked his camp, he planted a battery againſt that tower, and quickly brought it down. Solyman, however, finding the whole place in ſome meaſure covered with ſtrong fortifications of ſuch height as to command all his batteries, ordered an immenſe quantity of ſtones and earth to be brought; in which ſo great a number of hands were employed night and day by turns, that they quickly raiſed a couple of hillocks high enough to overtop the city-wall. They plied them accordingly with ſuch a continual fire, that the grand-maſter was obliged to cauſe them to be ſtrongly propped within with earth and timber. All this while the beſieged, who, from the top of the grand-maſter's palace, could diſcover how their batteries were planted, demoliſhed them with their cannon almoſt as faſt as they raiſed them.

Here the enemy thought proper to alter their meaſures, and to plant a ſtrong battery againſt the tower of St Nicholas, which, in the former ſiege by Mohammed, had reſiſted all the efforts of the then grand-vizier. This the baſhaw of Romania cauſed to be battered with 12 large pieces of braſs cannon, but had the mortification to ſee them all diſmounted by thoſe of the tower; to prevent which in future, he ordered them to be fired only in the night, and in the day had them covered with gabions and earth. This had ſuch ſucceſs, that, after 500 cannon-ſhot, the well began to ſhake and tumble into the ditch; but he was ſurpriſed to find another wall behind it, well terraced, and bordered with artillery, and himſelf obliged either to begin afreſh or give up the enterpriſe: and yet this laſt was what Solyman preferred, when he was told of its being built on a hard rock, incapable of being ſapped, and how firmly it had held out againſt all the efforts of Mohammed's vizier. The next attack was therefore ordered by him to be made againſt the baſtions of the town, and that with a vaſt number of the largeſt artillery, which continued firing during a whole month; ſo that the new wall of the baſtion of England was quite demoliſhed, though the old one ſtood proof againſt all their ſhot. That of Italy, which was battered by 17 large pieces of cannon, was ſtill worſe damaged; upon which Martinengo the engineer adviſed the grand-maſter to cauſe a ſally to be made on the trenches of the enemy out of the breach, whilſt he was making freſh entrenchments behind it. His advice ſucceeded; and the 200 men that ſallied out ſword in hand having ſurpriſed the Turks in the trench, cut moſt of them in pieces. At the ſame time a new detachment, which was ſent to repulſe them, being obliged, as that engineer rightly judged, to paſs by a ſpot which lay open to their artillery, were likewiſe moſtly deſtroyed by the continual fire that came from it, whilſt the aſſailants were employed in filling up ſeveral fathoms of the trench before they retired. By that time the breach had been repaired with ſuch new works, that all the efforts to mount it by aſſault proved equally ineffectual and deſtructive.

34 Terribly battered.

35 The beſieged want powder, but find means to ſupply the defect.

Unfortunately for the beſieged, the continual fire they had made cauſed ſuch a conſumption of their powder, that they began to feel the want of it; the perfidious d'Amarald, whoſe province it had been to viſit the magazines of it, having amuſed the council with a falſe report, that there was more than ſufficient to maintain the ſiege, though it ſhould laſt a whole twelve month. But here the grand-maſter found means to ſupply in ſome meaſure that unexpected defect, by the cautious proviſion he had made of a large quantity of ſaltpetre, which was immediately ground and made into gunpowder, though he was at the ſame time obliged to order the engineers to be more ſparing of it for the future, and to make uſe of it only in the defence of ſuch breaches as the enemy ſhould make.

36 Deſperate encounters in mines, &c.

All this while the Turks had not gained an inch of ground; and the breaches they had made were ſo ſuddenly either repaired or defended by new entrenchments, that the very rubbiſh of them muſt be mounted by aſſault. Solyman, therefore, thought it now adviſable to ſet his numerous pioneers at work in five different parts, in digging of mines, each of which led to the baſtion oppoſite to it. Some of theſe were countermined by a new invented method of Martinengo; who by the help of braced ſkins, or drums, could diſcover where

Rhodes. where the miners were at work. Some of theſe he perceived, which he cauſed to be opened, and the miners to be driven out by hand grenadoes; others to be ſmothered, or burned, by ſetting fire to gunpowder. Yet did not this hinder two conſiderable ones to be ſprung, which did a vaſt deal of damage to the baſtion of England, by throwing down about ſix fathoms of the wall, and filling up the ditch with its rubbiſh: whereupon the Turks immediately climbed up ſword in hand to the top of it, and planted ſeven of their ſtandards upon the parapet; but being ſtopped by a traverſe, the knights, recovering from their ſurpriſe, fell upon them with ſuch fury, that they were obliged to abandon it with great loſs. The grand-maſter, who was then at church, quickly came to the place with his ſhort pike in his hand, attended by his knights, encouraging all he met with, burghers, ſoldiers, and others, to fight bravely in defence of their religion and country, and arrived time enough to aſſiſt in the taking down their ſtandards, and driving down the enemy by the way they came up. In vain did the vizier Muſtapha endeavour to prevent their flight by killing ſome of the foremoſt with his ſword, and driving the reſt back; they were obliged to abandon the baſtion, and, which was ſtill worſe, met with that death in their flight, which they had ſtrove to ſhun from the fire-arms which were diſcharged upon them from the ramparts. Three ſangiacs loſt their lives in this attack, beſides ſome thouſands of the Turks; the grand-maſter, on his ſide, loſt ſome of his braveſt knights, particularly his ſtandard-bearer.

The attacks were almoſt daily renewed with the ſame ill ſucceſs and loſs of men, every general ſtriving to ſignalize himſelf in the ſight of his emperor. At length the old general Peri, or Pyrrus, having haraſſed the troops which guarded the baſtion of Italy for ſeveral days ſucceſſively without intermiſſion, cauſed a ſtrong detachment, which he had kept concealed behind a cavalier, to mount the place by break of day, on the 13th of September; where, finding them overcome with ſleep and fatigue, they cut the throats of the ſentinels, and, ſliding through the breach, were juſt going to fall upon them. The Italians, however, quickly recovered themſelves and their arms, and gave them an obſtinate repulſe. The conteſt was fierce and bloody on both ſides; and the baſhaw ſtill ſupplying his own with new reinforcements, would hardly have failed of overpowering the other, had not the grand-maſter, whom the alarm had quickly reached, timely intervened, and, by his preſence, as well as example, revived his Rhodians, and thrown a ſudden panic among the enemy. Pyrrus, deſirous to do ſomething to wipe of the diſgrace of this repulſe, tried his fortune next on an adjoining work, lately raiſed by the grand-maſter Carettii: but here his ſoldiers met with a ſtill worſe treatment, being almoſt overwhelmed with the hand-grenadoes, melted pitch, and boiling oil, which came pouring upon them, whilſt the forces which were on the adjacent flanks made as great a ſlaughter of thoſe that fled; inſomuch that the janiſſaries began to reſume their old murmuring tone, and cry out that they were brought thither only to be ſlaughtered.

The grand vizier Muſtapha, afraid leſt their complaints ſhould reach his maſter, agreed at length, as the laſt reſort, to make a freſh attempt on the baſtion of England, whilſt, to cauſe a diverſion, the baſhaw Rhodes. Ahmed ſprung ſome freſh mines at an oppoſite part of the city. This was according executed on the 17th of September; when the former, at the head of five battalions, reſolutely mounted or rather crept up the breach, and, in ſpite of the fire of the Engliſh, advanced ſo far as to pitch ſome ſtandards on the top; when, on a ſudden, a crowd of Engliſh knights, commanded by one Bouk, or Burk, ſallied out of their entrenchments, and, aſſiſted by ſome other officers of diſtinction, obliged them to retire, though in good order. Muſtapha, provoked at it, led them back, and killed ſeveral knights with his own hand; and had his men ſupported him as they ought, the place muſt have been yielded to him: but the fire which was made from the adjacent batteries and muſketry diſconcerted them to ſuch a degree, that neither threats nor entreaties could prevent their abandoning the enterpriſe, and dragging him away with them by main force. The Rhodians loſt in that action ſeveral brave knights, both Engliſh and German; and, in particular, John Burk, their valiant commander: but the Turks loſt above 3000 men, beſides many officers of diſtinction. Much the ſame ill ſucceſs having attended Ahmed with his mines, one of which had been opened, and the other only bringing ſome fathoms of the wall down, he was alſo obliged to retreat; his troops, though ſome of the very beſt, being forced to diſperſe themſelves, after having borne the fire and fury of the Spaniſh and Auvergnian knights as long as they were able.

By this time Solyman, aſhamed and exaſperated at his ill ſucceſs, called a general council; in which he made ſome ſtinging reflections on his vizier, for having repreſented the reduction of Rhodes as a very eaſy enterpriſe. To avoid the effects of the ſultan's reſentment, the ſubtle Muſtapha declared, that hitherto they had fought the enemy as it were upon equal terms, as if they had been afraid of taking an ungenerous advantage of their ſuperiority, by which, ſaid he, we have given them an opportunity of oppoſing us with their united force wherever we attacked them. But let us now reſolve upon a general aſſault on ſeveral ſides of the town; and ſee what a poor defence their ſtrength, thus divided, will be able to make againſt our united force. The advice was immediately approved by all, and the time appointed for the execution of it was on the 24th of that month, and every thing was ordered to be got ready againſt that day. Accordingly the town was actually aſſaulted at four different parts, after having ſuffered a continual fire for ſome time from their artillery in order to widen the breaches; by which the grand-maſter eaſily underſtood their deſign, and that the baſtions of England and Spain, the poſt of Provence, and Terrace of Italy, were pitched upon for the aſſault, and took his precautions accordingly. 37 An aſſault in four different places at once.

The morning was no ſooner come, than each party mounted their reſpective breach with an undaunted bravery, the young ſultan, to animate them the more, having ordered his throne to be reared on an eminence, whence he could ſee all that was done. The Rhodians, on the other hand, were no leſs diligent in repulſing them with their cannon and other fire-arms, with their melted lead, boiling oil, ſtink-pots, and other uſual expedients. The one ſide aſcend the ſcaling ladders, fearleſs of all that oppoſed them; the other overturn their

Rhodes. their ladders and ſend them tumbling down headlong into the ditches, where they were overwhelmed with ſtones or diſpatched with darts and other miſſile weapons. The baſtion of England proves the ſcene of the greateſt ſlaughter and bloodſhed; and the grand-maſter makes that his poſt of honour, and, by his preſence and example, inſpires his men with freſh vigour and bravery, whilſt the continual thunder of his artillery makes ſuch horrid work among the aſſailants as chills all their courage, and forces them to give way: the lieutenant-general, who commands the attack, leads them back with freſh vigour, and mounts the breach at the head of all; immediately after comes a cannon-ball from the Spaniſh baſtion, which overturns him dead into the ditch. This diſaſter, inſtead of fear and dread, fills them with a furious deſire of revenging his death: but all their obſtinacy cannot make the Rhodians go one ſtep back, whilſt the prieſts, monks, young men and old, and even women of every rank and age, aſſiſt them with an uncommon ardour and firmneſs; ſome in overwhelming the enemy with ſtones; others in deſtroying them with melted lead, ſulphur, and other combuſtibles; and a third ſort in ſupplying the combatants with bread, wine, and other refreſhments.

The aſſault was no leſs deſperate and bloody on the baſtion of Spain, where the knights, who guarded it, not expecting to be ſo ſoon attacked, and aſhamed to ſtand idle, were aſſiſting the baſtion of Italy; which gave the Turks an opportunity to mount the breach and penetrate as far as their intrenchments, where they planted no leſs than 30 of their ſtandards on them. The grand-maſter was quickly appriſed of it, and ordered the baſtion of Auvergne to play againſt them; which was done with ſuch diligence, and ſuch continual fire, whilſt the Rhodians enter the baſtion by the help of their caſemates, and, ſword in hand, fall upon them with equal fury, that the Turks alike beſet by the fire of the artillery and the arms of the Rhodian knights, were forced to abandon the place with a conſiderable loſs. The aga with great bravery rallies them afreſh, and brings them back, by which time the grand maſter likewiſe appeared. The fight was renewed with greater fierceneſs; and ſuch ſlaughter was made on both ſides that the grand-maſter was obliged to draw 202 men out of St Nicholas tower to his aſſiſtance; theſe were commanded by ſome Roman knights, who led them on with ſuch ſpeed and bravery, that their very appearance on the baſtion made the janiſſaries draw back; which Solyman obſerving from his eminence, cauſed a retreat to be ſounded, to conceal the diſgrace of their flight. In theſe attacks there fell about 15,000 of his beſt troops, beſides ſeveral officers of diſtinction. The loſs of the beſieged was no leſs conſiderable, if we judge from the ſmall number of their forces; but the greateſt of all to them was that of ſome of their braveſt and moſt diſtinguiſhed knights and commanders, many of whom were killed, and ſcarce any eſcaped unwounded. But the moſt dreadful fate of all had like to have fallen on the favourite vizier Muſtapha, who had propoſed this general aſſault: the ill ſucceſs of which had ſo enraged the proud ſultan, that he condemned him to be ſhot with arrows at the head of his army; which dreadful ſentence was juſt ready to be executed, when the old baſhaw, by his intreaties, obtained a ſuſpenſion of it, in hopes that when his fury was abated, he ſhould alſo obtain his pardon. Rhodes.

Solyman, however was ſo diſcouraged by his ill ſucceſſes, that he was on the point of raiſing the ſiege, and would have actually done ſo, had he not been diverted from it by the advice which he received from an Albanian deſerter, ſome ſay by a letter from the traitor d'Amarald, that the far greater part of the knights were either killed or wounded, and thoſe that remained altogether incapable of ſuſtaining a freſh aſſault. This having determined him to try his fortune once more, the command of his forces was turned over to the baſhaw Achmed; and, to ſhow that he deſigned not to ſtir till he was maſter of the place, he ordered a houſe to be built on the adjacent mount Philermo for his winter-quarters. Achmed marched directly againſt the baſtion of Spain, which had ſuffered the moſt; where, before he could open the trenches, his men fell thick and threefold by the conſtant fire both of ſmall and great guns from the baſtion of Auvergne. He loſt ſtill a much greater number in rearing a rampart of earth to cover the attack, and give him an opportunity of ſapping the wall; and, as ſoon as he ſaw a large piece fall, ordered his men to mount the breach. They were no ſooner come to the top, than they found a new work and entrenchments which Martinengo had reared; and there they were welcomed with ſuch a briſk fire from the artillery, that they were glad to recover their trenches with the utmoſt precipitation, after having loſt the much greater part of their men. The attack was renewed, and a reciprocal fire continued with great obſtinacy, till a muſket-ſhot deprived that indefatigable engineer of one of his eyes, and the order of his aſſiduous ſervices for ſome time. The grand-maſter, having ordered him to be carried to his palace took his place, and kept it till he was quite cured, which was not till 34 days after; and continued all the time in the intrenchments with his handful of knights, ſcarcely allowing himſelf reſt night or day, and ever ready to expoſe himſelf to the greateſt dangers, with an ardour more becoming a junior officer than an old worn-out ſovereign; which made his knights more laviſh of their own lives than their paucity and preſent circumſtances could well admit of.

Soon after this, the treaſon of D'Amarald was diſcovered, and he was condemned to death and executed; but by this time the city was reduced to the laſt extremity. The pope, emperor, and other crowned heads, had been long and often importuned by the grand-maſter for ſpeedy aſſiſtance, without ſucceſs; and, as an addition to all the other diſaſters, thoſe ſuccours which were ſent to him from France and England periſhed at ſea. The new ſupply which he had ſent for of proviſions from Candia had the ſame ill fate; ſo that the winds, ſeas, and every thing, ſeemed combined to bring on the deſtruction of that city and order. The only reſource which could be thought of, under ſo diſmal a ſituation, was, to ſend for the few remaining knights and forces which were left to guard the other iſlands, to come to the defence of their capital, in hopes that, if they could ſave this, the others might in time be recovered, in caſe the Turks ſhould ſeize upon them. On the other hand, Solyman, grown impatient at the ſmall ground his general had gained, gave him expreſs orders to renew the attack with all imaginable ſpeed

Rhodes. and vigour, before the ſuccours which he apprehended were coming from Europe, obliged him to raiſe the ſiege. Achmed inſtantly obeyed, raiſed a battery of 17 large cannon againſt the baſtion of Italy, and quickly after made himſelf maſter of it, obliging the garriſon to retire farther into the city. Here the grand maſter was forced to demoliſh two of the churches, to prevent the enemy's ſeizing on them; and, with their materials, cauſed ſome new works and entrenchments to be made to hinder their proceeding farther.

The Turks, however, gained ground every day, though they ſtill loſt vaſt numbers of their men: at length the 30th of November came, when the grand-maſter, and both the beſiegers and beſieged, thought the laſt aſſault was to be given. The baſhaw Pyrrus, who commanded it, led his men directly to the entrenchments; upon which the bells of all the churches ſounded the alarm. The grand-maſter, and his few knights, troops, and citizens ran in crowds, and in a confuſed diſorderly manner, to the entrenchments, each fighting in his own way, or rather as his fear directed him. This attack would have proved one of the moſt deſperate that had yet been felt, had not a moſt vehement rain intervened, which carried away all the earth which the enemy had reared to ſerve them as a rampart againſt the artillery of the baſtion of Auvergne; ſo that being now quite expoſed to their continual fire, they fell in ſuch great numbers, that the baſhaw could no longer make them ſtand their ground, but all precipitately fled towards their camp. This laſt repulſe threw the proud ſultan into ſuch a fury, that none of his officers dared to come near him; and the ſhame of his having now ſpent near ſix whole months with ſuch a numerous army before the place, and having loſt ſuch myriads of his brave troops with ſo little advantage, had made him quite deſperate, and they all dreaded the conſequences of his reſentment.

Pyrrus at length, having given it time to cool, ventured to approach him, and propoſe a new project to him, which, if approved, could hardly fail of ſucceſs; which was, to offer the town a generous capitulation; and he obſerved, that in caſe the ſtubborn knights ſhould reject it, yet being now reduced to ſo ſmall a number, as well as their forces and fortifications almoſt deſtroyed, the citizens, who were moſt of them Greeks, and leſs ambitious of glory than ſolicitous for their own preſervation, would undoubtedly accept of any compoſition that ſhould ſecure to them their lives and effects.

This propoſal being reliſhed by the ſultan, letters were immediately diſperſed about the city, in his name, exhorting them to ſubmit to his government, and threatening them at the ſame time with the moſt dreadful effects of his reſentment if they perſiſted in their obſtinacy. Pyrrus likewiſe diſpatched a Genoeſe to approach as near as he could to the baſtion of Auvergne, and to intreat the knights to take pity of ſo many of their Chriſtian brethren, and not expoſe them to the dreadful effects which muſt follow their refuſal of a capitulation, ſo generouſly offered them at their laſt extremity. Other agents were likewiſe employed in other places: to all of whom the grand-maſter ordered ſome of his men to return this anſwer, That his order never treated with infidels but with ſword in hand. An Albanian was ſent next with a letter from the ſultan to him, who met with the ſame repulſe; after which he ordered his men to fire upon any that ſhould preſent themſelves upon the ſame pretence; which was actually done. But this did not prevent the Rhodians from liſtening to the terms offered by the Turks, and holding frequent cabals upon that ſubject; in which the general maſſacre of a town taken by aſſault, the dreadful ſlavery of thoſe that eſcaped, the rape of their wives and daughters, the deſtruction of their churches, the profanation of their holy relics and ſacred utenſils, and other dire conſequences of an obſtinate refuſal, being duly weighed againſt the ſultan's offers, quickly determined them which party to take. The grand-maſter, however, proving inexorable to all their intreaties, they applied to their Greek metropolitan, who readily went and repreſented all theſe things to him in the moſt pathetic terms: Yet he met with no better reception; but was told, that he and his knights were determined to be buried under the ruins of the city if their ſwords could no longer defend it, and he hoped their example would not permit them to ſhow leſs courage on that occaſion. This anſwer produced a quite contrary effect; and, as the citizens thought delays dangerous at ſuch a juncture, they came in a body to him by the very next morning, and plainly told him, that if he paid no greater regard to their preſervation, they would not fail of taking the moſt proper meaſures to preſerve the lives and chaſtity of their wives and children. Rhodes.

This reſolution could not but greatly alarm the grand-maſter; who thereupon called a council of all the knights, and informed them himſelf of the condition of the place. Theſe all agreed, particularly the engineer Martinengo, that it was no longer defenſible, and no other reſource left but to accept the ſultan's offers; adding, at the ſame time, that though they were all ready, according to the obligations of their order, to fight to the laſt drop of their blood, yet it was no leſs their duty to provide for the ſafety of the inhabitants, who, not being bound by the ſame obligations, ought not to be made a ſacrifice to their glory. It was therefore agreed, with the grand-maſter's conſent, to accept of the next offers the ſultan ſhould make. He did not let them wait long: for the fear he was in of a freſh ſuccour from Europe, the intrepidity of the knights, and the ſhame of being forced to raiſe the ſiege, prevailed upon him to hang out his pacific flag, which was quickly anſwered by another on the Rhodian ſide; upon which the Turks, coming out of their trenches, delivered up the ſultan's letter for the grand-maſter, to the grand-prior of St Giles, and the engineer Martinengo. The terms offered in it by Soliman appeared ſo advantageous, that they immediately exchanged hoſtages; and the knights that were ſent to him had the honour to be introduced to him, and to hear them confirmed by his own mouth, though not without threats of putting all to fire and ſword in caſe of refuſal, or even delay. Two ambaſſadors were forthwith ſent to him, to demand a truce of three days to ſettle the capitulation and intereſts of the inhabitants, who were part Greeks and part Latins; but this was abſolutely refuſed by the impatient monarch, out of a ſuſpicion of the rumoured ſuccour being near, and that the truce was only to gain time till it was come.

He therefore ordered the hoſtilities to be renewed

with from Italy; in which the Rhodians made a moſt noble defence, conſidering their ſmall number, and that they had now only the barbican or talle bray of the baſtion of Spain left to defend themſelves, and once more repulſed the enemy: at which the ſultan was ſo enraged, that he reſolved to overpower them by numbers on the next day; which was, after a ſtout defence, ſo effectually done, that they were forced to abandon that outwork, and retire into the city. In the meanwhile, the burghers, who had but a day or two before raiſed a freſh uproar againſt the grand-maſter, under pretence that he was going to give them up a prey to an infidel who regarded neither oaths nor ſolemn treaties, perceiving their own danger, came now to deſire him to renew the negociations, and only begged the liberty of ſending one of their deputies along with his, to ſecure their intereſts in the capitulation. He readily conſented to it; but gave them a charge to ſhow the baſhaw Achmed the treaty formerly concluded between Bajazet and his predeceſſor d'Aubuſſon, in which the former had entailed a dreadful curſe on any of his ſucceſſors that ſhould infringe it. This was done, in hopes that the ſhowing it to his maſter, who valued himſelf ſo much upon his ſtrict obſervance of his law, might produce ſome qualm in him which might lengthen the agreement, for they were ſtill as much in hopes of a ſuccour from Europe as he was in fear of it; but to their great ſurpriſe, Achmed had no ſooner peruſed than he tore it all in pieces, trampled it under his feet, and in a rage ordered them to be gone. The grand-maſter found no other reſource than to ſend them back to him the next day; when that miniſter, who knew his maſter's impatience to have the affair concluded, quickly agreed with them upon the terms, which were in ſubſtance as follow:

1. That the churches ſhould not be profaned. 2. That the inhabitants ſhould not be forced to part with their children to be made janiſſaries. 3. That they ſhould enjoy the free exerciſe of their religion. 4. That they ſhould be free from taxes during five years. 5. That thoſe who had a mind to leave the iſland ſhould have free leave to do ſo. 6. That if the grand-maſter and his knights had not a ſufficient number of veſſels to tranſport themſelves and their effects into Candia, the ſultan ſhould ſupply that defect. 7. That they ſhould have 12 days allowed them, from the ſigning of the articles, to ſend all their effects on board. 8. That they ſhould have the liberty of carrying away their relics, chalices, and other ſacred utenſils belonging to the great church of St John, together with all their ornaments and other effects. 9. That they ſhould likewiſe carry with them all the artillery with which they were wont to arm the galleys of the order. 10. That the iſlands belonging to it, together with the caſtle of St Peter, ſhould be delivered up to the Turks. 11. That, for the more eaſy execution of theſe articles, the Turkiſh army ſhould be removed at ſome miles diſtance from the capital. 12. That the aga of the janiſſaries, at the head of 4000 of his men, ſhould be allowed to go and take poſſeſſion of the place.

From this time the iſland of Rhodes has been ſubject to the Turks; and, like other countries ſubject to that tyrannical yoke, has loſt its former importance. The air is good, and the ſoil fertile, but ill cultivated. The capital is ſurrounded with triple walls and double ditches, and is looked upon to be impregnable. It is inhabited by Turks and Jews; the Chriſtians being obliged to occupy the ſuburbs, as not being allowed to ſtay in the town during the night. The town is ſituated in E. Long. 28. 25. N. Lat. 36. 54. Rhodiola Rhododendron

RHODIOLA, ROSE-WORT, in botany: A genus of the octandria order, belonging to the dioecia claſs of plants; and in the natural method ranking under the 13th order, *Succulentæ*. The male calyx is quadripartite; the corolla tetrapetalous. The female calyx is quadripartite, and there is no corolla; the nectaria are four; the piſtils four; and there are four polyſpermous capſules. There are two ſpecies, the roſea and the minor: the firſt grows naturally in the clefts of the rocks and rugged mountains of Wales, Yorkſhire, and Weſtmoreland. It has a very thick fleſhy root, which when cut or bruiſed ſends out an odour like roſes. It has thick ſucculent ſtalks, like thoſe of orpine, about nine inches long, cloſely garniſhed with thick ſucculent leaves indented at the top. The ſtalk is terminated by a cluſter of yelloviſh herbaceous flowers, which have an agreeable ſcent, but are of ſhort continuance. The ſecond ſort is a native of the Alps, and has purpliſh flowers which come out later than the former; it is alſo of a ſmaller ſize. Both ſpecies are eaſily propagated by parting their roots; and require a ſhady ſituation, and dry undunged ſoil. The fragrance of the firſt ſpecies, however, is greatly diminiſhed by cultivation.

OIL OF RHODIUM. See ASPHALATUS.

RHODODENDRON, DWARF ROSE-BAY, in botany: A genus of the monogynia order, belonging to the decandria claſs of plants; and in the natural method ranking under the 18th order, *Bicornes*. The calyx is quinquepartite; the corolla funnel-ſhaped; the ſtamina declining; the capſule quinquelocular. There are ſeven ſpecies: the moſt remarkable of which are, 1. The hirſutum, with naked hairy leaves, grows naturally on the Alps and ſeveral mountains of Italy. It is a low ſhrub, which ſeldom riſes two feet high, ſending out many ligneous branches covered with a light-brown bark, garniſhed cloſely with oval ſpear-ſhaped leaves, ſitting pretty cloſe to the branches. They are entire, having a great number of fine iron-coloured hairs on their edges and underſide. The flowers are produced in bunches at the end of the branches in May, having one funnel-ſhaped petal cut into five obtuſe ſegments, and of a pale-red colour. They make a good ſhow, and are ſucceeded by oval capſules, containing ripe ſeeds in Auguſt. 2. The ferrugineum, with ſmooth leaves, hairy on their underſide, is a native of the Alps and Apennines. It riſes with a ſhrubby ſtalk near three feet high, ſending out many irregular branches covered with a purpliſh bark, and cloſely garniſhed with ſmooth ſpear-ſhaped entire leaves, whoſe borders are reflexed backward; the upper ſide is of a light lucid green, their under ſide of an iron colour. The flowers are produced at the ends of the branches, are funnel-ſhaped, cut into five ſegments, and of a pale roſe colour. Theſe plants are propagated by ſeeds; but, being natives of barren rocky ſoils and cold ſituations, they do not thrive in gardens, and for want of their uſual covering of ſnow in the winter are often killed by froſt in warmer climates. 3. The chamæciſtus, or ciliated leaved dwarf roſe-bay, is a low deciduous ſhrub, native of Mount Baldus, and near Saltzburg in Germany. It grows

Rhododendron

grows to the height of about a yard; the branches are numerous, produced irregularly, and covered with a purplish bark. The leaves are oval, spear-shaped, small, and in the under surface of the colour of iron. The flowers are produced at the end of the branches in bunches, are of a wheel-shaped figure, pretty large, of a fine crimson colour, and handsome appearance. They appear in June, and are succeeded by oval capsules containing ripe seeds in September. 4. The Dauricum, or Daurian dwarf rose-bay, is a low deciduous shrub, and native of Dauria. Its branches are numerous, and covered with a brownish bark. The flowers are wheel-shaped, large, and of a beautiful rose colour: they appear in May, and are succeeded by oval capsules full of seeds, which in England do not always ripen. 5. The maximum, or American mountain laurel, is an evergreen shrub, and native of Virginia, where it grows naturally on the highest mountains, and on the edges of cliffs, precipices, &c where it reaches the size of a moderate tree, though in England it seldom rises higher than six feet. The flowers continue by succession sometimes more than two months, and are succeeded by oval capsules full of seeds. 6. The Ponticum, or Pontic dwarf rose-bay, is an evergreen shrub, native of the east, and of most shady places near Gibraltar. It grows to the height of four or five feet. The leaves are spear-shaped, glossy on both sides, acute, and placed on short foot-stalks on the branches: the flowers, which are produced in clusters, are bell-shaped, and of a fine purple colour. They appear in July, and are succeeded by oval capsules containing seeds, which in England seldom attain to maturity.

In Siberia, a species of this plant is used with great success in gouty and rheumatic affections; of which the following account is given in the 5th volume of the Medical commentaries, p. 434. in a letter from Dr Guthrie of Petersburgh to Dr Duncan of Edinburgh. "It is the rhododendrum chrysanthemum, nova species, belonging to the class of decandria, discovered by Professor Pallas in his tour through Siberia. This Alpine shrub grows near the tops of the high mountains named *Sajanes*, in the neighbourhood of the river Jenise in Siberia; and delights in the skirts of the snow-covered summits, above the region that produces trees. When the inhabitants of that country mean to exhibit it in arthritic or rheumatic disorders, they take about two drams of the dried shrub, stalk and leaves, with nine or ten ounces of boiling water, and putting them into an earthen pot, they lute on the head, and place them in an oven during the night. This infusion (for it is not allowed to boil) the sick man drinks next morning for a dose. It occasions heat, together with a degree of intoxication, resembling the effects of spirituous liquors, and a singular kind of uneasy sensation in the parts affected, accompanied with a sort of vermiculatio, which is likewise confined to the diseased parts. The patient is not permitted to quench the thirst which this medicine occasions; as fluids, particularly cold water, produce vomiting, which lessens the power of the specific. In a few hours, however, all the disagreeable effects of the dose disappear, commonly with two or three stools. The patient then finds himself greatly relieved of his disorder; and has seldom occasion to repeat the medicine above two or three times to complete a cure. The inhabitants of Siberia call this shrub *chei* or *tea*, from their drinking, in common, a weak infusion of it, as we do the Chinese plant of that name. This practice shows that the plant, used in small quantities, must be innocent. Professor Pallas informs me, that he sent some time ago some of this shrub dried to Professor Koelpin at Stetin; and he showed me a letter from that gentleman, where he says, that he has given it with success in several cases, particularly in what he calls the *arthritica venerea*, with a tophus arthriticus on the carpus, and it produced a complete cure. It must be remarked, that the dose which these hardy Siberians take, who are also in the habit of drinking it as tea, would, in all probability, be too strong for our countrymen; however, it is a medicine which we may certainly give with safety, beginning with small doses."

Rhœa ‖ Rhopola.

RHŒA. See Rhea.

RHŒADEÆ (*rhœas*, Linnæus's name, after Dioscorides, for the red poppy), the name, of the 27th order in Linnæus's fragments of a natural method, consisting of poppy and a few genera which resemble it in habit and structure. See Botany, p. 462.

RHOMBOIDES, in geometry, a quadrilateral figure whose opposite sides and angles are equal, but is neither equilateral nor equiangular.

Rhomboides, in anatomy, a thin, broad, and obliquely square fleshy muscle, situated between the basis of the scapula and the spina dorsi; so called from its figure. Its general use is to draw backward and upward the subspinal portion of the basis scapulæ.

RHOMBUS, in geometry, an oblique-angled parallelogram, or quadrilateral figure whose sides are equal and parallel, but the angles unequal, two of the opposite ones being obtuse and two acute.

RHONE, one of the largest rivers in France, which, rising among the Alps of Switzerland, passes through the lake of Geneva, visits that city, and then runs southwest to Lyons; where, joining the river Soane, it continues its course due south, passing by Orange, Avignon, and Arles, and falls into the Mediterranean a little above Marseilles.

RHOPIUM, in botany: A genus of the triandria order, belonging to the gynandria class of plants; and in the natural method ranking with those that are doubtful. The calyx is monophyllous and sexpartite; there is no corolla nor any stamina; the three antheræ are each attached to one of the styli; the capsule is tricoccous and sexlocular, each containing two seeds. There is only one species, *viz.* the meborea, a native of Guiana. This is a shrub rising about three or four feet in height. The flowers grow in the form of a corymbus; they are of a yellowish green colour; the capsules are black.

RHOPOLA, in botany: A genus of the monogynia order, belonging to the tetrandria class of plants; and in the natural method ranking with those that are doubtful. There is no calyx; the petals are four, oblong, obtuse, and narrowing at the base; the stamina are four, inserted in the corolla, and have large antheræ; the seed-vessel unilocular, and contains one seed. There is only one species, *viz.* the montana. This is a shrubby plant growing in Guiana, and remarkable for the great number of branches sent off from its trunk in every direction, and for the fetid smell of the wood and bark of this plant.

Rhubarb. Rhus.

RHUBARB. See Rhubarb.

RHUMB, in navigation, a vertical circle of any given place, or intersection of such a circle with the horizon; in which last sense rhumb is the same with a point of the compass.

Rhumb-line is also used for the line which a ship describes when sailing in the same collateral point of the compass, or oblique to the meridians.

RHUS, sumach, in botany: A genus of the trigynia order, belonging to the pentandria class of plants; and in the natural method ranking under the 42d order, *Dumosæ*. The calyx is quinquepartite; the petals five; the berry monospermous. There are 24 species, of which the most remarkable are,

1. The coriaria, or elm-leaved sumach, grows naturally in Italy, Spain, Turkey, Syria, and Palestine. The branches of this tree are used instead of oak-bark for tanning of leather; and it is said that the Turkey leather is all tanned with this shrub. It has a ligneous stalk, which divides at bottom into many irregular branches, rising to the height of eight or ten feet; the bark is hairy, of an herbaceous brown colour; the leaves are winged, composed of seven or eight pair of lobes, terminated by an odd one, bluntly sawed on their edges, hairy on their under side, of a yellowish-green colour, and placed alternately on the branches; the flowers grow in loose panicles on the end of the branches, which are of a whitish herbaceous colour, each panicle being composed of several spikes of flowers sitting close to the footstalks. The leaves and seeds of this sort are used in medicine, and are esteemed very restringent and stiptic.

2. The typhinum, Virginian sumach, or vinegar plant, grows naturally in almost every part of North America. This hath a woody stem, with many irregular branches, which are generally crooked and deformed. The young branches are covered with a soft velvet-like down, resembling greatly that of a young stag's horn, both in colour and texture, from whence the common people have given it the appellation of *stag's horn*; the leaves are winged, composed of six or seven pair of oblong heart shaped lobes, terminated by an odd one, ending in acute points, hairy on their underside, as is also the midrib. The flowers are produced in close tufts at the end of the branches, and are succeeded by seeds, inclosed in purple woolly succulent covers; so that the bunches are of a beautiful purple colour in autumn; and the leaves, before they fall in autumn, change to a purplish colour at first, and before they fall to a feuille-mort. This plant, originally a native of North America, has been long cultivated in the north of Germany, and is lately introduced into Russia. It has got the name of the *vinegar plant* from the double reason of the young growth of its fruit, when fermented, producing either now or adding to the strength of old weak vinegar, whilst its ripe berries afford an agreeable acid, which might supply the place when necessary of the citric acid. The power of astringency of this plant in all its parts recommends it as useful in several of the arts. As for example, the ripe berries boiled with alum make a good dye for hats. The plant in all its parts may be used as a succedaneum for oak-bark in tanning, especially the white glove leather. It will likewise answer to prepare a dye for black, green, and yellow colours; and with martial vitriol it makes a good ink. The milky juice that flows from incisions made in the trunk or branches, makes when dried the balls of a varnish little inferior to the Chinese. Bees are remarkably fond of its flowers; and it affords more honey than any of the flowering shrubs, so that it may prove a useful branch of economy, where rearing these insects is an object. The natives of America use the dried leaves as tobacco.

3. The glabrum, with winged leaves, grows naturally in many parts of North America; this is commonly titled by the gardeners *New England sumach*. The stem of this is stronger and rises higher than that of the former; the branches spread more horizontally; they are not quite so downy as those of the last, and the down is of a brownish colour; the leaves are composed of many more pair of lobes, which are smooth on both sides; the flowers are disposed in loose panicles, which are of an herbaceous colour.

4. The Carolinianum, with sawed winged leaves, grows naturally in Carolina; the seeds of this were taken from thence by the late Mr Catesby, who has given a figure of the plant in his Natural History of Carolina. This is by the gardeners called the *scarlet Carolina sumach*; it rises commonly to the height of seven or eight feet, dividing into many irregular branches, which are smooth, of a purple colour, and pounced over with a greyish powder, as are also the footstalks of the leaves. The leaves are composed of seven or eight pair of lobes, terminated by an odd one; these are not always placed exactly opposite on the midrib, but are sometimes alternate. The upper side of the lobes are of a dark green, and their under hoary, but smooth. The flowers are produced at the end of the branches in very close panicles, which are large, and of a bright red colour.

5. The Canadense, with winged spear-shaped leaves, grows naturally in Canada, Maryland, and several other parts of North America. This hath smooth branches of a purple colour, covered with a grey pounce. The leaves are composed of seven or eight pair of lobes, terminated by an odd one; the lobes are spear-shaped, sawed on their edges, of a lucid green on their upper surface, but hoary on their under, and are smooth. The flowers are produced at the end of the branches in large panicles, which are composed of several smaller, each standing upon separate footstalks; they are of a deep red colour, and the whole panicle is covered with a grey pounce, as if it had been scattered over them.

6. The copallinum, or narrow-leaved sumach, grows naturally in most parts of North America, where it is known by the title of *beach sumach*, probably from the place where it grows. This is of humbler growth than either of the former, seldom rising more than four or five feet high in Britain, dividing into many spreading branches, which are smooth, of a light brown colour, closely garnished with winged leaves, composed of four or five pair of narrow lobes, terminated by an odd one; they are of a light green on both sides, and in autumn change purplish. The midrib, which sustains the lobes, has on each side a winged or leafy border, which runs from one pair of lobes to another, ending in joints at each pair, by which it is easily distinguished from the other sorts. The flowers are produced in loose panicles at the end of the branches, of a yellowish herbaceous colour.

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Rhus. These ſix ſorts are hardy plants, and will thrive in the open air The firſt and fourth ſorts are not quite ſo hardy as the others, ſo muſt have a better ſituation, otherwiſe their branches will be injured by ſevere froſt in the winter. They are eaſily propagated by ſeeds, which if ſown in autumn the plants will come up the following ſpring; but if they are ſown in ſpring, they will not come up till the next ſpring; they may be either ſown in pots, or the full ground. If they are ſown in pots in autumn, the pots ſhould be placed under a common frame in winter, where the ſeeds may be protected from hard froſt; and in the ſpring, if the pots are plunged into a very moderate hot-bed, the plants will ſoon riſe, and have thereby more time to get ſtrength before winter. When the plants come up, they muſt be gradually hardened to bear the open air, into which they ſhould be removed as ſoon as the weather is favourable, placing them where they may have the morning ſun; in the ſummer, they muſt be kept clean from weeds, and in dry weather watered. Toward autumn it will be proper to ſtint their growth by keeping them dry, that the extremity of their ſhoots may harden; for if they are replete with moiſture, the early froſts in autumn will pinch them, which will cauſe their ſhoots to decay almoſt to the bottom, if the plants are not ſcreened from them. If the pots are put under a common frame in autumn, it will ſecure the plants from injury: for while they are young and the ſhoots ſoft, they will be in danger of ſuffering, if the winter proves very ſevere; but in mild weather they muſt always enjoy the open air, therefore ſhould never be covered but in froſt. The ſpring following, juſt before the plants begin to ſhoot, they ſhould be ſhaken out of the pots, and carefully ſeparated, ſo as not to tear the roots; and tranſplanted into a nurſery, in rows three feet aſunder, and one foot diſtance in the rows. In this nurſery they may ſtand two years to get ſtrength, and then may be tranſplanted where they are to remain.

7. Beſides theſe, Linnæus has included in this genus the toxicodendron or poiſon-tree, under the name of *rhus vernix* or *poiſon-aſh*. This grows naturally in Virginia, Pennſylvania, New England, Carolina, and Japan, riſing with a ſtrong woody ſtalk to the height of 20 feet and upwards; though in Britain it is ſeldom ſeen above 12, by reaſon of the plants being extremely tender. The bark is brown, inclining to grey; the branches are garniſhed with winged leaves compoſed of three or four pair of lobes terminated by an odd one. The lobes vary greatly in their ſhape, but for the moſt part they are oval and ſpear-ſhaped. The footſtalks become of a bright purple towards the latter part of ſummer, and in autumn all the leaves are of a beautiful purple before they fall off.

All the ſpecies of ſumach abound with an acrid milky juice, which is reckoned poiſonous; but this property is moſt remarkable in the vernix. The moſt diſtinct account of it is to be found in Profeſſor Kalm's Travels in North America. "An inciſion (ſays he) being made into the tree, a whitiſh yellow juice, which has a nauſeous ſmell, comes out between the bark and the wood. This tree is not known for its good qualities, but greatly ſo for the effect of its poiſon; which, tho' it is noxious to ſome people, yet does not in the leaſt affect others. And therefore one perſon can handle the tree as he pleaſes, cut it, peel off its bark, rub it or the wood upon his hands, ſmell at it, ſpread the juice upon his ſkin, and make more experiments, with no inconvenience to himſelf: another perſon, on the contrary, dares not meddle with the tree while its wood is freſh; nor can he venture to touch a hand which has handled it, nor even to expoſe himſelf to the ſmoke of a fire which is made with this wood, without ſoon feeling its bad effects; for the face, the hands, and frequently the whole body, ſwell exceſſively, and is affected with a very acute pain. Sometimes bladders or bliſters ariſe in great plenty, and make the ſick perſon look as if he was infected by a leproſy. In ſome people the external thin ſkin, or cuticle, peels off in a few days, as is the caſe when a perſon has ſcalded or burnt any part of his body. Nay, the nature of ſome perſons will not even allow them to approach the place where the tree grows, or to expoſe themſelves to the wind when it carries the effluvia or exhalations of this tree with it, without letting them feel the inconvenience of the ſwelling which I have juſt now deſcribed. Their eyes are ſometimes ſhut up for one, or two, or more days together, by the ſwelling. I know two brothers, one of whom could without danger handle this tree in what manner he pleaſed, whereas the other could not come near it without ſwelling. A perſon ſometimes does not know that he has touched this poiſonous plant, or that he has been near it, before his face and hands ſhow it by their ſwelling. I have known old people who were more afraid of this tree than of a viper; and I was acquainted with a perſon who, merely by the noxious exhalations of it, was ſwelled to ſuch a decree, that he was as ſtiff as a log of wood, and could only be turned about in ſheets.

"I have tried experiments of every kind with the poiſon-tree on myſelf. I have ſpread its juice upon my hands, cut and broke its branches, peeled off its bark, and rubbed my hands with it, ſmelt at it, carried pieces of it in my bare hands, and repeated all this frequently, without feeling the baneful effects ſo commonly annexed to it; but I, however, once experienced, that the poiſon of the ſumach was not entirely without effect upon me. On a hot day in ſummer, as I was in ſome degree of perſpiration, I cut a branch of the tree, and carried it in my hand for about half an hour together, and ſmelt at it now and then. I felt no effects from it in the evening. But next morning I awoke with a violent itching of my eye-lids and the parts thereabouts; and this was ſo painful, that I could hardly keep my hands from it. It ceaſed after I had waſhed my eyes for a while with very cold water. But my eye-lids were very ſtiff all that day. At night the itching returned; and in the morning when I awoke, I felt it as ill as the morning before, and I uſed the ſame remedy againſt it. However, it continued almoſt for a whole week together; and my eyes were very red, and my eye-lids were with difficulty moved during all that time. My pain ceaſed entirely afterwards. About the ſame time I had ſpread the juice of the tree very thick upon my hand. Three days after, they occaſioned bliſters, which ſoon went off without affecting me much. I have not experienced any thing more of the effects of this plant, nor had I any deſire ſo to do. However, I found that it could not exert its power upon me when I was not perſpiring.

"I have never heard that the poiſon of this ſumach has

Sapire Kino

has been made, but the pain ceases after a few days duration. The natives formerly made their flutes of this tree, because it has a great deal of pith. Some people aboard me, that a person surfeiting from its fruit, in some calculations, would easily recover by spreading a mixture of the wood burnt to charcoal, and hog's lard, upon the swelled parts. Some asserted, that they had really tried this remedy. In some places this tree is rooted out, on purpose that its poison may not affect the workmen."

The natives are said to distinguish this tree in the dark by its extreme coldness to the touch. The juice of the kinds of sumach, when exposed to the heat of the sun, becomes so thick and clammy, that it is used for bird-lime, and the inspissated juice of the poison-ash is said to be the true varnish of Japan. A cataplasm made with the fresh juice of the poison-ash, applied to the feet, is said by Hughes, in his Natural History of Barbadoes, to kill the vermin called by the West Indians *chigers*. Very good vinegar is made from an infusion of the fruit of an American sumach, which for that reason is called the *vinegar-tree*. The resin called *turpentine* is from the rhus copallinum. See COPAL.

RHYME, RHIME, *Ryme*, or *Rime*, in poetry, the similar sound or cadence and termination of two words which end two verses, &c. Or rhyme is a similitude of sound between the last syllable or syllables of a verse, succeeding either immediately or at a distance of two or three lines. See POETRY, nº 177, &c.

RHYMER (Thomas the), was a native of the parish of Earlstown, in the county of Berwick. His real name and title was Sir Thomas Lermont. He lived at the west end of Earlstown, where part of his house is now standing, called *Rhymer's Tower*; and there is a stone built in the fore wall of the church with this inscription on it,

Auld Rhymer's race lies in this place.

He lived in the 13th century, and was contemporary with one of the earls of March, who lived in the same place.

RHYTHM, in music, the variety in the movement, as to the quickness or slowness, length or shortness, of the notes. Or it may be defined more generally, the proportion which the parts of the motion have to each other.

RIAL, or RYAL, a Spanish coin. See MONEY-*Table*.

RIAL, or *Royal*, is also the name of a piece of gold anciently current in Britain for 10 s.

RIBAN, or RIBBAN, in heraldry, the eighth part of a bend. See HERALDRY, p. 447.

RIBAND, or RIBLON, a narrow sort of silk, chiefly used for head-ornaments, badges of chivalry, &c.

In order to give our readers an idea of the manner in which this curious and valuable branch of manufactures is managed, a view of the ribbon-weaver at his loom is represented in Plate CCCCXXXV. where 1. Is the frame of the loom. 2. The cattle, containing 48 pulleys. 3. The branches, on which the pulleys turn. 4. The tires, or the riding-cords, which run on the pulleys, and pull up the high-lisses. 5. The list-sticks, to which the high-lisses are tied. 6. The high-lisses, or lists, are a number of long threads, with platines, or plate-leads, at the bottom; and ringlets, or loops, about their middle, through which the cords or cross-threads of the ground-harness ride. 7. The plate-leads, or platines, are flat pieces of lead, of about six inches long, and three or four inches broad at the top, but round at the bottom; some use black slates instead of them: their use is to pull down those lisses which the workman had raised by the treddle, after his foot is taken off. 8. The branches or cords of the ground-harness, which go thro' the loops in the middle of the high-lisses: on the well-ordering of these cords chiefly depends the art of ribbon-weaving, because it is by means of this contrivance that the weaver draws in the thread or silk that makes the flower, and rejects or excludes the rest. 9. The batton: this is the wooden frame that holds the reed or shuttle, and beats or closes the work: where, observe, that the ribbon-weaver does not beat his work; but as soon as the shuttle is passed, and his hand is taken away, the batton is forced, by a spring from the top, to beat the work close. 10. The shuttle, or reed. 11. The spring of the batton, by which it is made to close the work. 12. The long-harness are the front-reeds, by which the figure is raised. 13. The linguas are the long pieces of round or square lead, tied to the end of each thread of the long-harness to keep them tight. 14. The broad piece of wood, about a foot square, leaning somewhat forward, intended to ease the weaver as he stoops to his shuttle; it is fixed in the middle of the breast-beam. Some weavers, instead of this, have a contrivance of a cord or rope that is fastened to the front-frame, and comes across his breast; this is called a *slopfall*. 15. The seat-bench; this leans forward very much. 16. The foot-step to the treddles. 17. The breast-beam, being a cross-bar that passes from one of the standards to the other, so as to front the workman's breast: to this breast-bar is fixed a roll, upon which the ribbon passes in its way to be rolled upon the roller, that turns a little below. 18. The clamps, or pieces of wood, in which the broaches that confine the treddles rest. 19. The treddles are long narrow pieces of wood, to the ends of which the cords that move the lisses are fastened. 20. The treddle-cords are only distinguished from the riding-cords by a board full of holes, which divide them, in order to prevent the plate-leads, which are tied to the high-lisses, from pulling them too high when the workman's foot is off the treddle: which stop is made by a knot in the treddle-cord, too big to be forced through that hole in the board. 21. The lames are two pieces of thin narrow boards, only used in plain works, and then to supply the place of the long-harness. 22. The knee-roll, by which the weaver rolls up his ribbon as he sees proper, or by bit and bit as it is finished. 23. The back-rolls, on which the warp is rolled. It is to be observed, that there are always as many rolls as colours in the work to be wove. 24. The clamps, which support the rollers. 25. The returning-sticks, or, as others call them, the *returns*, or the *tumblers*, or *pulleys*, to which the tiers are tied, to clear the course of cords through the high-lisses. 26. The catch-board for the tumblers. 27. The tire-board. 28. The buttons for the knee-rolls and treddle-board, described in number 20.

Ribaud, Ribands.

Ribbons of all sorts are prohibited from being imported into Britain.

RIBANDS (from *rid* and *bend*), in naval architecture,

Ribands, Ribes.

ture, long narrow flexible pieces of timber, nailed upon the outside of the ribs, from the stem to the stern-post, so as to envelope the ship lengthwise, and appear on her side and bottom like the meridians on the surface of the globe. The ribands being judiciously arranged with regard to their height and distance from each other, and forming regular sweeps about the ship's body, will compose a kind of frame, whose interior surface will determine the curve of all the intermediate or filling-timbers which are stationed between the principal ones. As the figure of the ship's bottom approaches to that of a conoid, and the ribands have a limited breadth, it is apparent that they cannot be applied to this convex surface without forming a double curve, which will be partly vertical and partly horizontal; so that the vertical curve will increase by approaching the stem, and still more by drawing near the stern-post. It is also evident, that by deviating from the middle line of the ship's length, as they approach the extreme breadth at the midship-frame, the ribands will also form an horizontal curve. The lowest of these, which is terminated upon the stem and stern-post, at the height of the rising-line of the floor, and answers to the upper part of the floor-timber upon the midship-frame, is called the *floor-riband*. That which coincides with the wing-transom, at the height of the lower-deck upon the midship-frame, is termed the *breadth-riband*; all the rest, which are placed between these two, are called *intermediate ribands*. See SHIP-BUILDING.

RIBES, the CURRANT and GOOSEBERRY-BUSH: A genus of the monogynia order, belonging to the pentandria class of plants; and in the natural method ranking under the 36th order, *Pomaceæ*. There are five petals, and stamina inserted into the calyx; the style is bifid; the berry polyspermous, inferior.

The currant and the gooseberry were long considered each as a separate genus; *ribes* the currant, and *groſſularia* the gooseberry; but they are now joined together, the groſſularia being made a species of *ribes*; all the currant kinds having inermous or thornless branches, and racemous clusters of flowers and fruit, and the gooseberry, have spinous branches, and flowers and fruit for the most part singly.

There are three species of the currant-tree, two of which, and their varieties, merit culture for their fruit; the other as a plant of variety for observation: all of which are inermous or unarmed, having no thorns on the branches.

1. Rubrum, common red-currant tree, &c. hath a shrubby stem, dividing low into many branches, forming a bushy head, five or six feet high or more, without thorns; broad trilobate leaves, and smooth pendulous clusters of plane greenish flowers, succeeded by small clusters of berries. It grows naturally in woods and the hedges in most parts of Europe, and comprises all sorts of red and white currants; as, common small red currant—large bunched red currant—Champaigne pale-red currant—common small white currant—large white Dutch currant—yellow blotched-leaved currant—silver striped leaved—gold striped leaved—gooseberry-leaved. All these sorts are varieties of one species, *ribes rubrum*, or common red currant; it being the parent from which all the others were first obtained from the seed, and improved by culture. They all flower in the spring, and the fruit ripens in June and July; and by having the trees in different situations and modes of training, such as plantations of standards in the open quarters for the general supply, others trained against walls or pales of different aspect, the fruit may be continued ripe in good perfection from about the middle of June until November, provided the later crops are defended with mats or nets from the birds. Ribes.

2. The nigrum, or black currant tree, hath a shrubby stem, dividing low into many branches, forming a bushy head five or six feet high; broad trilobate leaves of a rank odour, and having racemous clusters of oblong greenish flowers, succeeded by thin clusters of black berries. The fruit of this species being of a strong flavour, and somewhat physical relish, is not generally liked; it, however, is accounted very wholesome: there is also made of it a syrup of high estimation for sore throats and quinsies; hence the fruit is often called *squinancy berries*. There is a variety called the *Pennsylvanian black currant*, having smaller shoots and leaves, not strong scented, and small fruit but of little value; so the shrub is esteemed only for variety and shrubberies. The mode of bearing of all the varieties of currants is both in the old and young wood all along the sides of the branches and shoots, often upon a sort of small sprigs and snags, producing the fruit in numerous long pendulous clusters.

3. The groſſularia, or common gooseberry bush, rises with a low shrubby stem, dividing low into a very branchy bushy head, armed with spines; trilobate smallish leaves, having hairy ciliated footstalks; and small greenish flowers, succeeded by hairy berries. It consists of many varieties, of different sizes and colours.

4. The reclinatum, or reclinated broad-leaved gooseberry-bush, rises with a low shrubby stem, and reclinated somewhat prickly branches, trilobate broadish leaves, and small greenish flowers, having the pedunculi furnished with tryphyllous bractea.

5. The oxyacanthoides, or oxyacantha-leaved gooseberry, hath a shrubby stem, and branches armed on all sides with spines, and largish trilobate hawthorn leaves.

6. The uva crispa, or smooth gooseberry, hath a shrubby stem, and branches armed with spines; trilobate leaves; pedicles having monophyllous bractea; and smooth fruit.

7. The cynosbati, or prickly-fruited gooseberry bush, hath a shrubby stem and branches, armed with spines, mostly at the axillas, and prickly fruit in clusters.

All the above seven species of ribes, both currants and gooseberry kinds, and their respective varieties, are very hardy shrubs, that prosper almost anywhere, both in open and shady situations, and in any common soil; bearing plentifully in any exposure, though in open sunny situations they produce the largest and fairest fruit, ripening to a richer vinous flavour; but it is eligible to plant them in different situations and aspects, in order to have the fruit as early and late as possible.

They are commonly planted in the kitchen-garden, mostly as dwarf standards, in the open quarters, for the general supply; being disposed sometimes in continued plantations in rows, eight or ten feet by six asunder, where great quantities of the fruit are required for market or other large supplies; and are sometimes disposed in single ranges round the outward

edge

Rices
Rice

ches of the quarters, eight feet afunder; frequently in ſpring digs trenches, in order to divide the ground into ſquare beds or breaks, of from 20 to 40 feet wide, which alſo ſerves to ſhelter the ground a little in winter; in all of which methods of planting in the ſtandards, they muſt be generally trained up to a ſingle ſtem about a foot long, then ſuffered to branch out every way and ſpread into bowy heads, keeping the middle, however, open, and the branches moderately thin, to admit the air and ſun; though ſome are trained, that is, trained on two ſides oppoſitely, ſo as to make the other branches range in a line like an eſpalier, they will take up much leſs of the ground, and, by admitting the ſun and air more freely, they will produce large fair fruit. They are likewiſe trained againſt walls or palings, like other wall-trees, but principally ſome of the large red and white ſorts in cordons, in which they will produce fine large fruit, and thoſe againſt any ſouth fence will ripen early, and be high flavoured; but it is proper to plant a few both againſt ſouth, north, eaſt, and weſt walls, in order to obtain the fruit ripe both early and late, in a long ſucceſſion. It is alſo proper to plant a few of the fineſt ſorts of gooſeberries againſt a warm fence, both to have early green gooſeberries for tarts, &c. as well as to ripen early; and they will grow very large and fine. Sometimes both currants and gooſeberries are alſo trained in low eſpaliers for variety, and they produce very fine fruit.

The fruits both of the currant and gooſeberry are of an acid and cooling nature, and as ſuch are ſometimes uſed in medicine, eſpecially the juice reduced to a jelly by boiling with ſugar. From the juice of currants alſo a very agreeable wine is made.

RICAUT, or RYCAUT (Sir Paul), an eminent Engliſh traveller, of the time of whoſe birth we find no account; but in 1661, he was appointed ſecretary to the earl of Winchelſea, who was ſent ambaſſador extraordinary to the Ottoman Porte. During his continuance in that ſtation, he wrote, "The preſent State of the Ottoman Empire, in three books, containing the maxims of the Turkiſh policy, their religion, and military diſcipline," London, folio, 1670. He afterwards reſided 11 years as conſul at Smyrna, where, at the command of Charles II. he compoſed "The preſent ſtate of the Greek and Armenian Churches, *anno* Chriſti 1678." On his return, Lord Clarendon being appointed lord-lieutenant of Ireland, made him his principal ſecretary for Leinſter and Connaught: king James II. knighted him; and made him one of the privy council in Ireland, and judge of the court of admiralty; all which he held till the Revolution. He was employed by King William as reſident at the Hanſe-towns in Lower Saxony, where he continued for ten years; but being worn out with age and infirmities, he obtained leave to return in 1700, and died the ſame year. Ricaut continued "Knolles's Hiſtory of the Turks, and Platina's Lives of the Popes;" beſides which, there are ſome other productions under his name.

RICCIA, in botany: A genus of the natural order of algæ, belonging to the cryptogamia claſs of plants. There is no calyx, but a vehicular cavity within the ſubſtance of the leaf. There is no corolla; the antheræ are cylindrical, and ſeſſile, placed on the germen, which is turbinated; the ſtyle is filiform, perforating the anthera; and the ſeed caſe is ſpherical, crowned with the withered antheræ; the ſeeds are hemiſpherical and pedicellated.

Rice
Richardia.

RICE. See ORYZA. "Rice *bras*, (ſays Mr Marſden) whilſt in the huſk, is in India called *paddee*, and aſſumes a different name in each of its other various ſtates. We obſerve no diſtinction of this kind in Europe, where our grain retains through all its ſtages, till it becomes flour, its original name of barley, wheat, or oats. The following, beſide many others, are names applied to rice, in its different ſtages of growth and preparation: *paddee*, original name of the ſeed: *aſſay*, grain of late ſeaſon: *bunnee* the plants before removed to the ſawoors: *bras* or *bray*, rice, the huſk of the paddee being taken off: *charroop*, rice cleaned for boiling: *naſſee*, boiled rice: *peerang*, yellow rice: *jambar*, a ſervice of rice, &c. History of Sumatra, p. 60.

Among people whoſe general objects of contemplation are few, thoſe which do of neceſſity engage their attention, are often more nicely diſcriminated than the ſame objects among more enlightened people, whoſe ideas ranging over the extenſive field of art and ſcience, diſdain to fix long on obvious and common matters. *Paddee*, on Sumatra and the Malay iſlands, is diſtinguiſhed into two ſorts; *Laddang* or up-land paddee, and *Sawoor* or low-land, which are always kept ſeparate, and will not grow reciprocally. Of theſe the former bears the higher price, being a whiter, heartier, and better flavoured grain, and having the advantage in point of keeping. The latter is much more prolific from the ſeed, and liable to leſs riſk in the culture, but is of a watery ſubſtance, produces leſs increaſe in boiling, and is ſubject to a ſwifter decay. It is, however, in more common uſe than the former. Beſide this general diſtinction, the paddee of each ſort, particularly the Laddang, preſents a variety of ſpecies, which, as far as my information extends, I ſhall enumerate, and endeavour to deſcribe. The common kind of dry ground paddee: colour, light brown: the ſize rather large, and very little crooked at the extremity. Paddee *undallong*: dry ground: ſhort round grain: grows in whorles or bunches round the ſtock. Paddee *ebbaſs*: dry ground: large grain: common. Paddee *gailoo*: dry ground: light coloured: ſcarce. Paddee *jenne*: dry ground: deep coloured; ſmall grain: ſcarce. Paddee *ejoo*: dry ground: light coloured. Paddee *kooning*: dry ground: deep yellow: fine rice: crooked, and pointed. Paddee *coocoor ballum*: dry ground: much eſteemed: light coloured; ſmall, and very much crooked, reſembling a dove's nail, from whence its name. Paddee *peſing*: dry ground: outer coat light brown; inner red: longer, ſmaller, and leſs crooked than the *coocoor ballum*. Paddee *Santong*: the fineſt ſort that is planted in wet ground: ſmall, ſtraight, and light coloured. In general it may be obſerved that the larger grained rice is the leaſt eſteemed, and the ſmaller and whiter the moſt prized. In the Lampoon country they make a diſtinction of paddee *crawang* and paddee *jerroo*; the former of which is a month earlier in growth than the latter."

Rice-Bird. See ORYZIVIRA.

Rice-Bunting. See EMBERIZA.

RICHARD I. II. and III. kings of England. See ENGLAND.

RICHARDIA, in botany: A genus of the monogynia order, belonging to the hexandria claſs of plants: and

Richardſon

and in the natural method ranking under the 47th order, *Stellatæ*. The calyx is ſexpartite; the corolla monopetalous, and ſubcylindrical; and there are three ſeeds.

RICHARDSON (Samuel), a celebrated Engliſh ſentimental novel-writer, born in 1688, was bred to the buſineſs of a printer, which he exerciſed all his life with eminence. Though he is ſaid to have underſtood no language but his own, yet he acquired great reputation by his three epiſtolary novels, intitled *Pamela*, *Clariſſa*, and *Sir Charles Grandiſon*; which ſhow an uncommon knowledge of human nature. His purpoſe being to promote virtue, his pictures of moral excellence are by much too highly coloured; and he has deſcribed his favourite characters ſuch rather as we might wiſh them to be, than as they are to be found in reality. It is alſo objected by ſome, that his writings have not always the good effect intended: for that, inſtead of improving natural characters, they have faſhioned many artificial ones; and have taught delicate and refined ladies and gentlemen to deſpiſe every one but their own ſelf-exalted perſons. But after all that can be urged of the ill effects of Mr Richardſon's novels on weak minds, eager to adopt characters they can only burleſque; a ſenſible reader will improve more by ſtudying ſuch models of perfection, than of thoſe nearer to the natural ſtandard of human frailty, and where thoſe frailties are artfully exaggerated ſo as to fix and miſemploy the attention on them. A ſtroke of the palſy carried off Mr Richardſon, after a few days illneſs, upon the 4th of July 1761. He was a man of fine parts, and a lover of virtue; which, for aught we have ever heard to the contrary, he ſhowed in his life and converſation as well as in his writings. Beſides the works abovementioned, he is the author of an Æſop's Fables, a Tour through Britain, 4 vols. and a volume of Familiar Letters upon buſineſs and other ſubjects. He is ſaid from his childhood to have delighted in letter-writing; and therefore was the more eaſily led to throw his romances into that form; which, if it enlivens the hiſtory in ſome reſpects, yet lengthens it with unintereſting prate, and formalities that mean nothing, and on that account is ſometimes found a little tedious and fatiguing.

The moſt eminent writers of his own country, and even of foreign parts, have paid their tribute to the tranſcendant talents of Mr Richardſon, whoſe works have been publiſhed in almoſt every language and country of Europe. They have been greatly admired, notwithſtanding every diſſimilitude of manners, or every diſadvantage of tranſlation. M. Diderot, a late celebrated French author, ſpeaking of the means employed to move the paſſions, in his Eſſay on Dramatic Poetry, mentions Richardſon as a perfect maſter of that art: "How ſtriking (ſays he), how pathetic, are his deſcriptions! His perſonages, though ſilent, are alive before me; and of thoſe who ſpeak, the actions are ſtill more affecting than the words."—The famous John James Rouſſeau, ſpeaking, in his letter to M. d'Alembert, of the novels of Richardſon, aſſerts, "that nothing was ever written equal to, or even approaching them, in any language."—Mr Aaron Hill calls his Pamela a "delightful nurſery of virtue."—Dr Warton ſpeaks thus of Clementina: "Of all repreſentations of madneſs, that of Clementina, in the Hiſtory of Sir Charles Grandiſon, is the moſt deeply intereſting. I know not whether even the madneſs of Lear is wrought up, and expreſſed, by ſo many little ſtrokes of nature and paſſion. It is abſolute pedantry to prefer and compare the madneſs of Oreſtes in Euripides to this of Clementina."—Dr Johnſon, in his Introduction to the 97th number of the Rambler, which was written by Mr Richardſon, obſerves, that the reader was indebted for that day's entertainment to an author, "from whom the age has received greater favours, who has enlarged the knowledge of human nature, and taught the paſſions to move at the command of virtue;" and, in his Life of Rowe, he ſays, "The character of Lothario ſeems to have been expanded by Richardſon into that of Lovelace; but he has excelled his original in the moral effect of the fiction. Lothario, with gaiety which cannot be hated, and bravery which cannot be deſpiſed, retains too much of the ſpectator's kindneſs. It was in the power of Richardſon alone to teach us at once eſteem and deteſtation; to make virtuous reſentment overpower all the benevolence which wit, and elegance, and courage, naturally excite; and to loſe at laſt the hero in the villain."—Dr Young very pertinently obſerved, that Mr Richardſon, with the mere advantages of nature, improved by a very moderate progreſs in education, ſtruck out at once, and of his own accord, into a new province of writing, in which he ſucceeded to admiration. And what is more remarkable, that he not only began, but finiſhed, the plan on which he ſet out, leaving no room for any one after him to render it more complete: and that not one of the various writers that have ever ſince attempted to imitate him, have in any reſpect equalled, or at all approached near him. This kind of romance is peculiarly his own; and "I conſider him (continues the Doctor) as a truly great natural genius; as great and ſupereminent in his way as Shakeſpeare and Milton were in theirs."

Richardſon

RICHARDSON (Jonathan), a celebrated painter of heads, was born about the year 1665, and againſt his inclination was placed by his father-in-law apprentice to a ſcrivener, with whom he lived ſix years; when obtaining his freedom by the death of his maſter, he followed the bent of his diſpoſition, and at 20 years old became the diſciple of Riley; with whom he lived four years, whoſe niece he married, and of whoſe manner he acquired enough to maintain a ſolid and laſting reputation, even during the lives of Kneller and Dahl; and to remain at the head of the profeſſion when they went off the ſtage. Walpole's Anecdotes of Painting in England.

There is ſtrength, roundneſs, and boldneſs in his colouring; but his men want dignity, and his women grace. The good ſenſe of the nation is characteriſed in his portraits. You ſee he lived in an age when neither enthuſiaſm nor ſervility were predominant. Yet with a pencil ſo firm, poſſeſſed of a numerous and excellent collection of drawings, full of the theory, and profound in reflections on his art, he drew nothing well below the head, and was void of imagination. His attitudes, draperies, and back-grounds, are totally inſipid and unmeaning; ſo ill did he apply to his own practice the ſagacious rules and hints he beſtowed on others. Though he wrote with fire and judgment, his paintings owed little to either. No man dived deeper into the inexhauſtible ſtores of Raphael, or was more ſmitten with the native luſtre of Vandyck. Yet though capa-

[illegible] the elevation of the one and the elegance of the other, he could never contrive to see with their eyes, when he was to copy nature himself. One wonders that he could comment their works so well, and imitate them so little.

He quitted himself some years before his death; but his temperance and virtue contributed to protract his life to a great length in the full enjoyment of his understanding, and in the felicity of domestic friendship. He had had a paralytic stroke that affected his arm, yet never disabled him from his customary walks and exercise. He had been in St James's Park, and died suddenly at his house in Queen's-square on his return home, May 28. 1745, when he had passed the [illegible] year of his age. He left a son and four daughters, one of whom was married to his disciple Mr Hudson, and another to Mr Grigson an attorney. The taste and learning of the son, and the harmony in which he lived with his father, are visible in the joint works they composed. The father in 1719 published two discourses: 1. An Essay on the whole Art of Criticism as it relates to Painting; 2. An Argument in behalf of the Science of a Connoisseur; bound in one volume octavo. In 1722 came forth An Account of some of the statues, bas-reliefs, drawings, and pictures, in Italy, &c. with Remarks by Mr Richardson, senior and junior. The son made the journey; and from his notes, letters, and observations, they both at his return compiled this valuable work. As the father was a formal man, with a slow, but loud and sonorous voice, and, in truth, with some affectation in his manner; and as there is much singularity in his style and expression, these peculiarities, (for they were scarcely foibles) struck superficial readers, and between the laughers and the envious the book was much ridiculed. Yet both this and the former are full of matter, good sense, and instruction: and the very quaintness of some expressions, and their laboured novelty, show the difficulty the author had to convey mere visible ideas through the medium of language. Those works remind one of Cibber's inimitable treatise on the stage: when an author writes on his own profession, feels it profoundly, and is sensible his readers do not, he is not only excusable, but meritorious, for illuminating the subject by new metaphors or bolder figures than ordinary. He is the coxcomb that sneers, not he that instructs, in appropriated diction.

If these authors were censured when conversant within their own circle, it was not to be expected that they would be treated with milder indulgence when they ventured into a sister region. In 1734 they published a very thick octavo, containing explanatory notes and remarks on Milton's Paradise Lost, with the life of the author, and a discourse on the poem. Again were the good sense, the judicious criticisms, and the sentiments that broke forth in this work, forgotten in the singularities that distinguish it. The father having said in apology for being little conversant in classic literature, that he had looked into them through his son, Hogarth, whom a quibble could furnish with wit, drew the father peeping through the nether end of a telescope, with which his son was perforated, at a Virgil aloft on a shelf. Yet how forcibly Richardson entered into the spirit of his author, appears from his comprehensive expression, that *Milton was an ancient, born two thousand years after his time.* Richardson, however, was as incapable of reaching the sublime or harmonious in poetry, as he was in painting, though so capable of illustrating both. Some specimens of verse that he has given us here and there in his works, excite no curiosity for more, though he informs us in his Milton, that if painting was his wife, poetry had been his secret concubine. It is remarkable, that another commentator of Milton has made the same confession,

——Sunt & mihi carmina, me quoque dicunt
Vatem pastores——

says Dr Bentley. Neither the doctor nor the painter add *sed non ego credulus illis,* though all their readers are ready to supply it for both. Besides his pictures and commentaries, we have a few etchings by his hand, particularly two or three of Milton, and his own head. The sale of his collection of drawings, in February 1747, lasted 18 days, and produced about 2060 l. his pictures about 700 l. Hudson his son-in-law bought many of the drawings.

Richelet, Riches.

RICHELET (Cæsar Peter), a French writer, born in 1631 at Chemin in Champagne. He was the friend of Patru and Ablancourt; and like them applied himself to the study of the French language with success. He compiled a dictionary of that language, full of new and useful remarks; but exceptionable, as containing many satirical reflections and obscenities. The best edition is that of Lyons, 3 vols folio, 1728. He also collected a small dictionary of rhymes, and composed some other pieces in the grammatical and critical way. He died in 1698.

RICHES, a word used always in the plural number, means wealth, money, possession, or a splendid sumptuous appearance. When used to express the fortune of private persons, whether patrimonial or acquired, it signifies *opulencea;* terms which express not the enjoyment, but the possession, of numerous superfluities.—The riches of a state or kingdom expresses the produce of industry, of commerce, of different incorporated bodies, of the internal and external administration of the principal members of which the society is composed, &c.

Our Saviour says, that it is more easy for a camel to go through the eye of a needle, than for a rich man to enter the kingdom of heaven; and we find, in fact, that riches frequently bring along with them a degree of inattention, lukewarmness, and irreligion, such as sufficiently confirms the divine assertion; which is merely a general truth, and which by no means asserts the absolute impossibility of being virtuous and rich at the same time. For as the ancient philosophers wisely taught, riches, considered in themselves, and abstractedly from the bad purposes to which they may be applied, are not necessarily incompatible with virtue and wisdom. They are indeed absolutely indifferent; in good hands they will be useful, and promote the cause of truth, virtue, and humanity; and in bad hands they are the source of much mischief; on the one hand they confer the power of doing much good, and on the other they are equally powerful in doing ill.

To men, however, whose principles of virtue are not sufficiently founded, riches are unquestionably a dangerous and seducing bait; and as the ancients rightly taught, they are to the greatest number of men, in an infinite

Riches. infinite variety of circumſtances, a powerful obſtacle to the practice of moral virtues, to the progreſs of truth, and a weight which prevents them from riſing to that degree of knowledge and perfection of which human nature is capable. They multiply without ceaſing the occaſions of vice, by the facility which they give to ſatisfy a multitude of irregular paſſions, and to turn at length thoſe who are attached to them from the road of virtue, and from the deſire of enquiring after truth.

It is this which Seneca means to expreſs, when he ſays, "that riches in a vaſt number of caſes have been a great obſtacle to philoſophy; and that, to enjoy freedom of mind neceſſary for ſtudy, a man muſt live in poverty, or as if he were poor. Every man (adds he) who wiſhes to lead a pleaſant, tranquil, and ſecure life, muſt avoid, as much as poſſible, the deceitfulneſs of riches, which are a bait with which we allow ourſelves to be taken as in a ſnare, without afterwards having the power to extricate ourſelves, being ſo much the more unhappy, that we believe we poſſeſs them, while, on the contrary, they tyrannize over us." *Senec. Epiſt.* 17. and *Epiſt.* 8.

"The wiſe man (ſays the ſame author in another place) does not love riches to exceſs, but he would not chooſe wholly to diveſt himſelf of them; he does not receive them into his ſoul, but into his houſe; he is careful of them, and employs them for the purpoſe of opening a wide field for virtue, and of making it appear in all its ſplendor. Who can doubt that a wiſe man has not more occaſions of diſplaying the elevation and greatneſs of his mind when he is poſſeſſed of riches than when he labours under indigence, ſince, in the laſt condition, he can exerciſe only one virtue, namely, reſignation; whereas, riches give him an opportunity of diſplaying, in their greateſt luſtre, the virtues of temperance, liberality, diligence, regularity, and magnificence. There is no occaſion, then, to prohibit philoſophers from the uſe of wealth, or to condemn wiſdom to poverty. The philoſopher may poſſeſs the greateſt riches, provided he has not employed force or ſhed blood in acquiring them; provided he has not gained them by unjuſt or illegal means; in a word, provided the uſe which he makes of them be as pure as the ſource from which they were derived, and no perſon (the envious excepted) regretting his poſſeſſion; he will not refuſe the kindneſs of fortune, and will enjoy, without ſhame or pride, the wealth acquired by honeſt means; he will have more reaſon to glory, if, after expoſing his riches to the view of the whole world, he can deſire any perſon to carry away the reward of treachery or the fruits of oppreſſion. If, after theſe words, his riches continue undiminiſhed, this man is truly great, and worthy to be rich. If he has not allowed to enter into his poſſeſſion the ſmalleſt piece of money gained by unwarrantable means, neither will he refuſe the greateſt riches, which are the bleſſings of fortune, and the fruit of virtue: if he can be rich, he will chooſe to be ſo, and he ſhall have riches; but he will regard them as bleſſings of uncertain poſſeſſion, and of which he may be every moment deprived; he will not permit them to be a load to himſelf or to others; he will give them to the good, or to thoſe whom he would make good; but he will give them with the niceſt wiſdom, taking care always to diſtribute them to the moſt worthy, and to thoſe who remember that they muſt Richlieu. give an account, as well of the wealth which they receive from heaven, as of the purpoſes to which it is applied." *Senec. de Vita Beata*, cap. 21, 22, & 23.

RICHLIEU (John Armand du Pleſſis de), cardinal of Richlieu and Fronſac, biſhop of Lucon, &c. was born at Paris in 1585. He was of excellent parts; and at the age of 22 had the addreſs to obtain a diſpenſation to enjoy the biſhopric of Lucon in 1607. Returning into France, he applied himſelf in a particular manner to the function of preaching; and his reputation this way procured him the office of almoner to the queen Mary de Medicis. His abilities in the management of affairs advanced him to be ſecretary of ſtate in 1616; and the king ſoon gave him the preference to all his other ſecretaries. The death of the marquis d'Ancre having produced a revolution in ſtate affairs, Richlieu retired to Avignon; where he employed himſelf in compoſing books of controverſy and piety. The king having recalled him to court, he was made a cardinal in 1622; and, two years after, firſt miniſter of ſtate, and grand maſter of the navigation. In 1626, the iſle of Rhée was preſerved by his care, and Rochelle taken, having ſtopped up the haven by that famous dyke which he ordered to be made there. He accompanied the king to the ſiege of Cazal, and contributed not a little to the raiſing of it in 1629. He alſo obliged the Huguenots to the peace at Alets, which proved the ruin of that party; he took Pamerol, and ſuccoured Cazal beſieged by Spinola. In the mean time the nobles found fault with his conduct, and perſuaded the king to diſcard him. The cardinal, for his part, was unmoved with it; and by his reaſonings overthrew what was thought to be determined againſt him; ſo that, inſtead of being diſgraced, he from that moment became more powerful than ever. He puniſhed all his enemies in the ſame manner as they would have had him ſuffer; and the day which produced this event, ſo glorious to cardinal Richlieu, was called the *day of dupes*. This able miniſter had from thenceforwards an aſcendancy over the king's mind; and he now reſolved to humble the exceſſive pride of the houſe of Auſtria. For that purpoſe he concluded a treaty with Guſtavus Adolphus king of Sweden, for carrying the war into the heart of Germany. He alſo entered into a league with the duke of Bavaria; ſecured Lorrain; raiſed a part of the princes of the empire againſt the emperor; treated with the Dutch to continue the war againſt Spain; favoured the Catalans and Portugueſe till they ſhook off the Spaniſh yoke; and, in ſhort, took ſo many different meaſures, that he accompliſhed his deſign; and after having carried on the war with ſucceſs, was thinking of concluding it by a peace, when he died at Paris on the 4th of December 1642, aged 58. He was interred in the Sorbonne, where a magnificent mauſoleum is erected to his memory. This great politician made the arts and ſciences flouriſh; formed the botanical garden at Paris, called the *king's garden*; founded the French academy; eſtabliſhed the royal printing-houſe; erected the palace afterwards called *Le Palais Royal*, which he preſented to the king; and rebuilt the Sorbonne with a magnificence that appears truly royal. Beſides his books of controverſy and piety, there go under the name of this miniſter, A Journal, in 2 vols 12mo; and a Political Teſtament, in 12mo; all treating of politics and ſtate affairs. Cardi-

Ricinus. [illegible] Mazarine purſued Richlieu's plan, and completed many of the ſchemes which he had begun, but left unfiniſhed.

RICINUS, or PALMA CHRISTI, in botany: A genus of the monodelphia order, belonging to the monoecia claſs of plants; and in the natural method ranking under the 38th order, *Tricocca*. The male calyx is quinquepartite; there is no corolla; the ſtamina numerous. The female calyx is tripartite; there is no corolla, but three bifid ſtyles, with a trilocular capſule, and a ſingle ſeed. There are three ſpecies, of which the most remarkable is the communis, or common palma Chriſti. This tree is of a ſpeedy growth, as in one year it arrives at its full height, which ſeldom exceeds 20 feet. The trunk is ſubligneous; the pith is large; the leaves broad and palmated; the flower ſpike is ſimple, and thickly ſet with yellow bloſſoms in the ſhape of a cone; the capſules are triangular and prickly, containing three ſmooth gray mottled ſeeds. When the bunches begin to turn black, they are gathered, dried in the ſun, and the ſeeds picked out. They are afterwards put up for uſe as wanted, or for exportation.

Lemon [illegible] vol. viii. [illegible] p. [illegible]. Plate ccccxxxvii.

Caſtor oil is obtained either by expreſſion or by decoction. The firſt method is practiſed in England; the latter in Jamaica. It is common firſt to parch the nuts or ſeeds in an iron pot over the fire; but this gives the oil an empyreumatic taſte, ſmell, and colour; and it is beſt prepared in this manner: A large iron pot or boiler is firſt prepared, and half filled with water. The nuts are then beaten in parcels in deep wooden mortars, and after a quantity is beaten it is thrown into the iron veſſel. The fire is then lighted, and the liquor is gently boiled for two hours, and kept conſtantly ſtirred. About this time the oil begins to ſeparate, and ſwims on the top, mixed with a white froth, and is ſkimmed off till no more riſes. The ſkimmings are heated in a ſmall iron pot, and ſtrained through a cloth. When cold, it is put up in jars or bottles for uſe.

Caſtor oil, thus made, is clear and well flavoured, and if put into proper bottles will keep ſweet for years. The expreſſed caſtor oil ſoon turns rancid, becauſe the mucilaginous and acrid parts of the nut are ſqueezed out with the oil. On this account the preference is given to well prepared oil by decoction. An Engliſh gallon of the ſeeds yield about two pounds of oil, which is a great proportion.

Before the revolution in America, the planters imported train oil for lamps and other purpoſes about ſugar works. It is now found that the caſtor oil can be procured as cheap as the fiſh oil of America: it burns clearer, and has not any offenſive ſmell. This oil, too, is fit for all the purpoſes of the painter, or for the apothecary in ointments and plaſters. As a medicine, it purges without ſtimulus, and is ſo mild as to be given to infants ſoon after birth, to purge off the meconium. All oils are noxious to inſects, but the caſtor oil kills and expels them. It is generally given as a purge after uſing the cabbage bark ſome days. In conſtipation and belly-ach this oil is uſed with remarkable ſucceſs. It ſits well on the ſtomach, allays the ſpaſm, and brings about a plentiful evacuation by ſtool, eſpecially if at the ſame time fomentations, or the warm bath, are uſed.—Belly-ach is at preſent leſs frequent in Jamaica than formerly, owing to ſeveral causes. The inhabitants, in general, live better, and drink better liquors; but the exceſſive drinking of new rum ſtill makes it frequent amongſt ſoldiers, ſailors, and the lower order of white people. It has been known to happen too from viſceral obſtructions after intermittents, or marſh fevers, in Jamaica.

Rickets || Ridicule.

The ricinus Americanus grows as tall as a little tree, and is ſo beautiful that Millar ſays it deſerves a place in every curious garden, and he planted it himſelf at Chelſea. It expands into many branches; the leaves are ſometimes two feet in diameter, and the ſtem as large as a middle-ſized broom ſtaff; towards the top of the branch it has a cluſter of flowers, ſomething reſembling a bunch of grapes; the flowers are ſmall and ſtaminous, but on the body of the plant grow bunches of rough triangular huſks, each containing three ſpeckled ſeeds, generally ſomewhat leſs than horſe beans; the ſhell is brittle, and contains white kernels of a ſweet, oily, and nauſeous taſte. From this kernel the oil is extracted, and if the medicine ſhould become officinal, the ſeeds may be imported at a reaſonable rate, as the plant grows wild and in great plenty in all the Britiſh and French American iſlands. See *OLEUM Palmæ Chriſti*. Of the ricinus communis there are a great many varieties; all of them fine majeſtic plants, annual, or at moſt biennial, in Britain; but in their native ſoil they are ſaid to be perennial both in root and ſtem. They are propagated by ſeeds ſown on a hot-bed, and require the ſame treatment as other tender exotics.

Plate ccccxxxvii.

RICKETS, in medicine. See there, n° 347.

RICOCHET, in gunnery, is when guns, howitzers, or mortars, are loaded with ſmall charges, and elevated from 5 to 12 degrees, ſo as to fire over the parapet, and the ſhot or ſhell rolls along the oppoſite rampart: it is called *ricochet-firing*, and the batteries are likewiſe called *ricochet batteries*. This method of firing was firſt invented by M. Belidor, and firſt uſed at the ſiege of Ath in 1697. This mode of firing out of mortars was firſt tried in 1723 at the military ſchool at Straſburg, and with ſucceſs. At the battle of Roſbach, in 1757, the king of Pruſſia had ſeveral 6-inch mortars made with trunnions, and mounted on travelling-carriages, which fired obliquely on the enemy's lines, and amongſt their horſe, loaded with 8 ounces of powder, and at an elevation of one degree 15 minutes, which did great execution; for the ſhells rolling along the lines, with burning fuzes, made the ſtouteſt of the enemy not wait for their burſting.

RICOTIA, in botany: A genus of the ſiliquoſa order, belonging to the tetradynamia claſs of plants; and in the natural method ranking under the 39th order, *Siliquoſa*. The ſiliqua is unilocular, oblong, and compreſſed with plain valvules.

RIDGE, in agriculture, a long piece of riſing land between two furrows. See AGRICULTURE, n° 111.

RIDGLING, or RIDGEL, among farriers, &c. the male of any beaſt that has been but half-gelt.

RIDICULE, in matters of literature, is that ſpecies of writing which excites contempt with laughter.

The *ridiculous*, however, differs from the *riſible*, (ſee RISIBLE.) A riſible object produceth an emotion of laughter merely: a ridiculous object is improper as well as riſible; and produceth a mixed emotion, which is vented by a laugh of deriſion or ſcorn.

Burleſque, though a great engine of ridicule, is not confined to that ſubject; for it is clearly diſtinguiſhable into burleſque that excites laughter merely, and burleſque

Ridicule. burleſque that provokes deriſion or ridicule. A grave ſubject in which there is no impropriety, may be brought down by a certain colouring ſo as to be riſible; which is the caſe of *Virgil Traveſtie*, and alſo the caſe of the *Secchia Repita*; the authors laugh firſt, in order to make their readers laugh. The *Lutrin* is a burleſque poem of the other ſort, laying hold of a low and trifling incident, to expoſe the luxury, indolence, and contentious ſpirit of a ſet of monks. Boileau, the author, gives a ridiculous air to the ſubject, by dreſſing it in the heroic ſtyle, and affecting to conſider it as of the utmoſt dignity and importance. In a compoſition of this kind, no image profeſſedly ludicrous ought to find quarter, becauſe ſuch images deſtroy the contraſt; and accordingly the author ſhows always the grave face, and never once betrays a ſmile.

Elements of Criticiſm.

Though the burleſque that aims at ridicule produces its effects by elevating the ſtyle far above the ſubject, yet it has limits beyond which the elevation ought not to be carried: the poet, conſulting the imagination of his readers, ought to confine himſelf to ſuch images as are lively and readily apprehended: a ſtrained elevation, ſoaring above an ordinary reach of fancy, makes not a pleaſant impreſſion: the reader, fatigued with being always upon the ſtretch, is ſoon diſguſted; and, if he perſevere, becomes thoughtleſs and indifferent.—Further, a fiction gives no pleaſure unleſs it be painted in colours ſo lively as to produce ſome perception of reality; which never can be done effectually where the images are formed with labour or difficulty. For theſe reaſons, we cannot avoid condemning the *Batrachomuomachia*, ſaid to be the compoſition of Homer: it is beyond the power of imagination to form a clear and lively image of frogs and mice acting with the dignity of the higheſt of our ſpecies; nor can we form a conception of the reality of ſuch an action, in any manner ſo diſtinct as to intereſt our affections even in the ſlighteſt degree.

The *Rape of the Lock* is of a character clearly diſtinguiſhable from thoſe now mentioned; it is not properly a burleſque performance, but what may rather be termed *an heroi-comical poem*: it treats a gay and familiar ſubject with pleaſantry, and with a moderate degree of dignity: the author puts not on a maſk like Boileau, nor profeſſes to make us laugh like Taſſoni. The *Rape of the Lock* is a genteel ſpecies of writing, leſs ſtrained than thoſe mentioned; and is pleaſant or ludicrous without having ridicule for its chief aim; giving way, however, to ridicule where it ariſes naturally from a particular character, ſuch as that of Sir Plume. Addiſon's *Spectator* *, upon the exerciſe of the fan, is extremely gay and ludicrous, reſembling in its ſubject the *Rape of the Lock*.

* N° 102.

There remains to ſhow, by examples, the manner of treating ſubjects ſo as to give them a ridiculous appearance.

Il ne dit jamais, je vous donne, mais, je vous prete le bon jour. *Moliere.*

Orleans. I know him to be valiant.

Conſtable. I was told that by one that knows him better than you.

Orleans. What's he?

Conſtable. Marry, he told me ſo himſelf; and he ſaid, he car'd not who knew it. *Henry V. Shakeſpeare.*

He never broke any man's head but his own, and that was againſt a poſt when he was drunk. *Ibid.* Ridicule.

Millamont. Sententious Mirabel! prithee don't look with that violent and inflexible wiſe face, like Solomon at the dividing of the child in an old tapeſtry-hanging. *Way of the World.*

A true critic, in the peruſal of a book, is like a dog at a feaſt, whoſe thoughts and ſtomach are wholly ſet upon what the gueſts fling away, and conſequently is apt to ſnarl moſt when there are the feweſt bones. *Tale of a Tub.*

In the following inſtances, the ridicule ariſes from abſurd conceptions in the perſons introduced.

Maſcarille. Te ſouvient-il, vicomte, de cette demi-lune, que nous emportames ſur les enemis au ſiege d'Aſras?

Jodelet. Que veux-tu dire avec ta demi-lune? c'etoit bien une lune tout entiere. *Moliere, les Precieuſes Ridicules, ſc.* 11.

Slander. I came yonder at Eaton to marry Mrs Anne Page; and ſhe's a great lubberly boy.

Page. Upon my life then you took the wrong—

Slander. What need you tell me that? I think ſo when I took a boy for a girl: if I had been married to him, for all he was in woman's apparel, I would not have had him. *Merry Wives of Windſor.*

Valentine. Your bleſſing, Sir.

Sir Sampſon. You've had it already, Sir: I think I ſent it you to-day in a bill for four thouſand pound; a great deal of money, brother Foreſight.

Foreſight. Ay, indeed, Sir Sampſon, a great deal of money for a young man; I wonder what he can do with it. *Love for Love*, act 2. ſc. 7.

Millament. I nanſeate walking; 'tis a country diverſion; I lothe the country, and every thing that relates to it.

Sir Wilfull. Indeed, hah! look ye, look ye, you do? nay, 'tis like you may——here are choice of paſtimes here in town, as plays and the like; that muſt be confeſs'd, indeed.

Millament. Ah l'etourdie! I hate the town too.

Sir Wilfull. Dear heart, that's much——hah! that you ſhould hate 'em both! hah! 'tis like you may; there are ſome can't reliſh the town, and others can't away with the country——'tis like you may be one of theſe, Couſin. *Way of the World*, act 4. ſc. 4.

Lord Froth. I aſſure you, Sir Paul, I laugh at nobody's jeſts but my own, or a lady's: I aſſure you, Sir Paul.

Briſk. How? how, my Lord? what, affront my wit? Let me periſh, do I never ſay any thing worthy to be laugh'd at?

Lord Froth. O foy, don't miſapprehend me, I don't ſay ſo, for I often ſmile at your conceptions. But there is nothing more unbecoming a man of quality than to laugh; 'tis ſuch a vulgar expreſſion of the paſſions! every body can laugh. Then eſpecially to laugh at the jeſt of an inferior perſon, or when any body elſe of the ſame quality does not laugh with one; ridiculous! To be pleas'd with what pleaſes the crowd! Now, when I laugh I always laugh alone. *Double Dealer*, act 1. ſc. 4.

So

Ridicule. So sharp-sighted is pride in blemishes, and so willing to be gratified, that it takes up with the very slightest imperfections: such as a blunder in a foreigner in speaking our language, especially if the blunder can bear a sense that reflects on the speaker:

Quickly. The very mayn't an honest man.

Caius. What shall de honest man do in my closet? dere is no honest man dat shall come in my closet.

Merry Wives of Windsor.

Love speeches are finely ridiculed in the following passage,

Quoth he, My faith as adamantine,
As chains of destiny, I'll maintain;
True as Apollo was to speak,
Or oracle from heart of oak;
And if you'll give my flame but vent,
Now in close hugger-mugger pent,
And shine upon me but benignly,
With that one and that other pigsney,
The sun and day shall sooner part
Than love, or you, shake off my heart;
The sun, that shall no more dispense
His own, but your bright influence:
I'll carve your name on barks of trees,
With true lover-knots and flourishes;
That shall infuse eternal spring,
And everlasting flourishing:
Drink every letter on't in rum,
And make it brisk champaign become.
Where'er you tread, your foot shall set
The primrose and the violet;
All spices, perfumes, and sweet powders,
Shall borrow from your breath their odours;
Nature her charter shall renew
And take all lives of things from you;
The world depend upon your eye,
And, when you frown upon it, die.
Only our loves shall still survive,
New worlds and natures to out-live;
And, like to herald's moons, remain
All crescents, without change or wane.

Hudibras, part 2. *canto* 1.

Those who have a talent for ridicule, which is seldom united with a taste for delicate and refined beauties, are quick-sighted in improprieties; and these they eagerly grasp, in order to gratify their favourite propensity. Persons galled are provoked to maintain that ridicule is improper for grave subjects. Subjects really grave are by no means fit for ridicule; but then it is urged against them, that, when called in question whether a certain subject be really grave, ridicule is the only means of determining the controversy. Hence a celebrated question, Whether ridicule be or be not a test of truth?

On one side, it is observed, that the objects of ridicule are falsehood, incongruity, impropriety, or turpitude of certain kinds: but as the object of every excited passion must be examined by reason, before we can determine whether it be proper or improper; so ridicule must, apparently at least, establish the truth of the improprieties designed to excite the passion of contempt. Hence it comes in to the aid of argument and reason, when its impressions on the imagination are consistent with the nature of things; but when it strikes the fancy and affections with fictitious images, it becomes the instrument of deceit. But however ridicule may impress the idea of apparent turpitude or falsehood in the imagination, yet still reason remains the supreme judge; and thus ridicule can never be the final test or touchstone of truth and falsehood. Riding.

On the other side, it is contended that ridicule is not a subject of reasoning, but of sense or taste; (see and compare the articles Risible and Congruity). Stating the question, then, in more accurate terms, Whether the sense of ridicule be the proper test for distinguishing ridiculous objects from what are not so? they proceed thus: No person doubts that our sense of beauty is the true test of what is beautiful; and our sense of grandeur, of what is great or sublime. Is it more doubtful whether our sense of ridicule be the true test of what is ridiculous? It is not only the the true test, but indeed the only test; for this subject comes not, more than beauty or grandeur, under the province of reason. If any subject, by the influence of fashion or custom, have acquired a degree of veneration to which naturally it is not intitled, what are the proper means for wiping off the artificial colouring, and displaying the subject in its true light? A man of true taste sees the subject without disguise; but if he hesitate, let him apply the test of ridicule, which separates it from its artificial connections, and exposes it naked with all its native improprieties.—But it is urged, that the gravest and most serious matters may be set in a ridiculous light. Hardly so; for where an object is neither risible nor improper, it lies not open in any quarter to an attack from ridicule.

RIDING, in general, signifies the being carried along on any vehicle.

Riding on horseback. See Horsemanship.

Riding, in medicine. During this exercise all the viscera are shaken, and pressed against each other; at the same time the pure air acts with a greater force on the lungs. Weakly persons, or those whose stomachs are infirm, should, however, be cautious of riding before their meals are somewhat digested.

Riding, in naval affairs, is the state of a ship's being retained in a particular station, by means of one or more cables with their anchors, which are for this purpose sunk into the bottom of the sea, &c. in order to prevent the vessel from being driven at the mercy of the wind or current.—A rope is said to *ride*, when one of the turns by which it is wound about the capstern or windlass lies over another, so as to interrupt the operation of heaving.

Riding Athwart, the position of a ship which lies across the direction of the wind and tide, when the former is so strong as to prevent her from falling into the current of the latter.

Riding between the Wind and Tide, the situation of a vessel at anchor, when the wind and tide act upon her in direct opposition, in such a manner as to destroy the effort of each other upon her hull; so that she is in a manner balanced between their respective force, and rides without the least strain on her cables. When a ship does not labour heavily, or feel a great strain when anchored in an open road or bay, she is said to ride easy. On the contrary, when she pitches violently into the sea, so as to strain her cables, masts, or hull, it is called *riding hard*, and the vessel is termed a *hard rider*.

Riding. *roader*. A ſhip is rarely ſaid to *ride* when ſhe is faſtened at both the ends, as in a harbour or river, that ſituation being comprehended in the article MOORING.

RIDING, a diſtrict viſited by an officer.—Yorkſhire is divided into three ridings, viz. the eaſt, weſt, and north ridings. In all indictments in that county, both the town and riding muſt be expreſſed.

RIDING, as connected with gardening, and ſuſceptible of embelliſhment. See GARDENING.

Obſervations on Modern Gardening, p. 227, &c.

A riding, though in extent differing ſo widely from a garden, yet agrees with it in many particulars: for, excluſive of that community of character which reſults from their being both improvements, and both deſtined to pleaſure, a cloſer relation ariſes from the property of a riding, *to extend the idea of a ſeat*, and appropriate a whole country to the manſion; for which purpoſe it muſt be diſtinguiſhed from common roads, and the marks of diſtinction muſt be borrowed from a garden. Thoſe which a farm or a park can ſupply are faint and few; but whenever circumſtances belonging to a garden occur, they are immediately received as evidence of the domain. The ſpecies of the trees will often be deciſive: plantations of firs, whether placed on the ſides of the way, or in clumps or woods in the view, denote the neighbourhood of a ſeat: even limes and horſe-cheſnuts are not indifferent; for they have always been frequent in improvements, and rare in the ordinary ſcenes of cultivated nature. If the riding be carried through a wood, the ſhrubs, which for their beauty or their fragrance have been tranſplanted from the country into gardens, ſuch as the ſweet-briar, the viburnum, the euonymus, and the wood-bine, ſhould be encouraged in the underwood; and to theſe may be added ſeveral which are ſtill peculiar to ſhrubberies, but which might eaſily be transferred to the wildeſt coverts, and would require no further care.

1 Decorations of a riding.

Where the ſpecies are not, the diſpoſition may be particular, and any appearance of deſign is a mark of improvement. A few trees ſtanding out from a hedge-row, raiſe it to an elegance above common ruſticity: and ſtill more may be done by clumps in a field; they give it the air of a park. A cloſe lane may be decorated with plantations in all the little vacant ſpaces: and even the groups originally on the ſpot (whether it be a wood, a field, or a lane), if properly ſelected, and thoſe only left which are elegant, will have an effect: though every beauty of this kind may be found in nature, yet many of them are ſeldom ſeen together, and never unmixed. The number and the choice are ſymptoms of deſign.

Another ſymptom is variety. If the appendages of the riding be different in different fields, if in a lane, or a wood, ſome diſtinguiſhing circumſtance be provided for every bend; or when, carried over an open expoſure, it winds to ſeveral points of view; if this be the conduct throughout, the intention is evident, to amuſe the length of the way: variety of ground is alſo a characteriſtic of a riding, when it ſeems to have proceeded from choice; and pleaſure being the purſuit, the changes of the ſcene both compenſate and account for the circuity.

But a part undiſtinguiſhed from a common road, ſucceeding to others more adorned, will by the contraſt alone be ſometimes agreeable; and there are beauties frequent in the high-way, and almoſt peculiar to it, which may be very acceptable in a riding: a green lane is always delightful; a paſſage winding between thickets of brambles and briars, ſometimes with, ſometimes without a little ſpring-wood riſing amongſt them, or a cut in a continued ſweep through the furze of a down or the fern of a heath, is generally pleaſant. Nor will the character be abſolutely loſt in the interruption, it will ſoon be reſumed, and never forgotten; when it has been once ſtrongly impreſſed, very ſlight means will preſerve the idea. Riding.

Simplicity may prevail the whole length of the way when the way is all naturally pleaſant, but eſpecially if it be a communication between ſeveral ſpots, which in character are raiſed above the reſt of the country: A fine open grove is unuſual, except in a park or a garden; it has an elegance in the diſpoſition which cannot be attributed to accident, and it ſeems to require a degree of preſervation beyond the care of mere huſbandry. A neat railing on the edge of a ſteep which commands a proſpect, alone diſtinguiſhes that from other points of view. A building is ſtill more ſtrongly characteriſtic: it may be only ornamental, or it may be accommodated to the reception of company; for though a place to alight at interrupts the range of a riding, yet, as the object of an airing, it may often be acceptable. A ſmall ſpot which may be kept by the labour of one man, incloſed from the fields, and converted into a ſhrubbery or any other ſcene of a garden, will ſometimes be a pleaſing end to a ſhort excurſion from home: nothing ſo effectually extends the idea of a ſeat to a diſtance; and not being conſtantly viſited, it will always retain the charms of novelty and variety.

2 Of a village.

When a riding is carried along a high road, a kind of property may in appearance be claimed even there, by planting on both ſides trees equidiſtant from each other, to give it the air of an approach: regularity intimates the neighbourhood of a manſion. A village therefore ſeems to be within the domain, if any of the inlets to it are avenues: other formed plantations about it, and ſtill more trivial circumſtances, when they are evidently ornamental, ſometimes produce and always corroborate ſuch an effect; but even without raiſing this idea, if the village be remarkable for its beauty, or only for its ſingularity, a paſſage through it may be an agreeable incident in a riding.

The ſame ground which in the fields is no more than rough, often ſeems to be romantic when it is the ſite of a village; the buildings and other circumſtances mark and aggravate the irregularity. To ſtrengthen this appearance, one cottage may be placed on the edge of a ſteep, and ſome winding ſteps of unhewn ſtone lead up to the door; another in a hollow, with all its little appurtenances hanging above it. The poſition of a few trees will ſometimes anſwer the ſame purpoſe; a foot-bridge here and there for a communication between the ſides of a narrow dip, will add to the character; and if there be any rills, they may be conducted ſo as greatly to improve it.

A village which has not theſe advantages of ground, may, however, be beautiful; it is diſtinguiſhed by its elegance, when the larger intervals between the houſes are filled with open groves, and little clumps are introduced upon other occaſions. The church often is, it generally may be, made a pictureſque object. Even the cottages may be neat and ſometimes grouped with

Riding. with thickets. If the place be watered by a ſtream, the croſſings may be in a variety of pleaſing deſigns; and if a ſpring riſe, or only a well for common uſe be found by the ſide of the way, a little covering over it may be contrived which ſhall at the ſame time be ſimple and pretty.

There are few villages which may not eaſily be rendered agreeable. A ſmall alteration in a houſe will ſometimes occaſion a great difference in the appearance. By the help of a few trifling plantations, the objects which have a good effect may be ſhown to advantage, thoſe which have not may be concealed, and ſuch as are familiar be diſguiſed. And any form which offends the eye, whether of ground, or trees, or of buildings, may ſometimes be broken by the ſlighteſt circumſtances, by an advanced paling, or only by a bench. Variety and beauty, in ſuch a ſubject, are rather the effects of attention than expence.

3 Of the buildings of ſeveral kinds of objects in a riding.

But if the paſſage through the village cannot be pleaſant; if the buildings are all alike, or ſtand in unmeaning rows and ſimilar ſituations; if the place furniſhes no opportunities to contraſt the forms of dwellings with thoſe of out-houſes; to introduce trees and thickets; to interpoſe fields and meadows; to mix farms with cottages; and to place the ſeveral objects in different poſitions: yet on the outſide even of ſuch a village there certainly is room for wood; and by that alone the whole may be grouped into a maſs, which ſhall be agreeable when ſkirted by a riding; and ſtill more ſo when ſeen from a diſtance. The ſeparate farms in the fields, alſo, by planting ſome trees about them, or perhaps only by managing thoſe already on the ſpot, may be made very intereſting objects; or if a new one is to be built, beauty may be conſulted in the form of the houſe, and the diſpoſition of its appurtenances. Sometimes a character not their own, as the reſemblance of a caſtle or an abbey, may be given to them; they will thereby acquire a degree of conſideration, which they cannot otherwiſe be entitled to: and objects to improve the views are ſo important to a riding, that buildings muſt ſometimes be erected for that purpoſe only: but they ſhould be ſuch as by an actual effect adorn or dignify the ſcene; not thoſe little ſlight deceptions which are too well known to ſucceed, and have no merit if they fail: for though a fallacy ſometimes contributes to ſupport a character, or ſuggeſts ideas to the imagination, yet in itſelf it may be no improvement of a ſcene; and a bit of turret, the tip of a ſpire, and the other ordinary ſubjects of theſe frivolous attempts, are ſo inſignificant as objects, that whether they are real or fictitious is almoſt a matter of indifference.

4 Of a garden ſimilar in character to a riding.

The ſame means by which the proſpects from a riding are improved, may be applied to theſe from a garden; though they are not eſſential to its character, they are important to its beauty; and wherever they abound, the extent only of the range which commands them, determines whether they ſhall be ſeen from a riding or a garden. If they belong to the latter, that aſſumes in ſome degree the predominant properties of the former, and the two characters approach very near to each other: but ſtill each has its peculiarities. Progreſs is a prevailing idea in a riding; and the pleaſantneſs of the way is, therefore, a principal conſideration: but particular ſpots are more attended to in a garden; and to them the communications ought to be ſubordinate; their direction muſt be generally accommodated, their beauties ſometimes ſacrificed to the ſituation and the character of the ſcenes they lead to; an advantageous approach to theſe muſt be preferred to an agreeable line for the walk; and the circumſtances which might otherwiſe become it are miſplaced, if they anticipate the openings: it ſhould ſometimes be contraſted to them; be retired and dark if they are ſplendid or gay, and ſimple if they are richly adorned. At other times it may burſt unexpectedly out upon them; not on account of the ſurpriſe, which can have its effect only once; but the impreſſions are ſtronger by being ſudden; and the contraſt is enforced by the quickneſs of the tranſition. Riding.

In a riding, the ſcenes are only the amuſements of the way, through which it proceeds without ſtopping: in a garden they are principal; and the ſubordination of the walk raiſes their importance. Every art, therefore, ſhould be exerted to make them ſeem parts of the place. Diſtant proſpects cannot be ſo; and the alienation does not offend us; we are familiarized to it; the extent forbids every thought of a cloſer connection; and if a continuation be preſerved between them and the points which command them, we are ſatisfied. But *home-views* ſuggeſt other ideas; they appear to be within our reach: they are not only beautiful in proſpect, and we can perceive that the ſpots are delightful; but we wiſh to examine, to inhabit, and to enjoy them. Every apparent impediment to that gratification is a diſappointment; and when the ſcenes begin beyond the opening, the conſequence of the place is lowered; nothing within it engages our notice: it is an exhibition only of beauties, the property of which does not belong to it; and that idea, though indifferent in a riding, which is but a paſſage, is very diſadvantageous to ſuch a reſidence as a garden. To obviate ſuch an idea, the points of view ſhould be made important; the objects within be appendages to thoſe without; the ſeparations be removed or concealed; and large portions of the garden be annexed to the ſpots which are contiguous to it. The ideal boundary of the place is then carried beyond the ſcenes which are thus appropriated to it; and the wide circuit in which they lie, and the different poſitions in which they may be ſhown, afford a greater variety than can generally be found in any garden, the ſcenery of which is confined to the incloſure.

5 Deſcription of Perſfield.

Perſfield (a) is not a large place; the park contains about 300 acres; and the houſe ſtands in the midſt of it. On the ſide of the approach, the inequalities of the ground are gentle, and the plantations pretty; but nothing there is great. On the other ſide, a beautiful lawn falls precipitately every way into a deep vale which ſhelves down the middle; the declivities are diverſified with clumps and with groves; and a number of large trees ſtraggle along the bottom. This lawn is encompaſſed

(a) The ſeat of Mr Morris, near Cheptowe, in Monmouthſhire.

Riding. paſſed with wood; and through the wood are walks, which open beyond it upon thoſe romantic ſcenes which ſurround the park, and which are the glory of Persfield. The Wye runs immediately below the wood: the river is of a dirty colour; but the ſhape of its courſe is very various, winding firſt in the form of a horſe-ſhoe, then proceeding in a large ſweep to the town of Chepſtowe, and afterwards to the Severn. The banks are high hills; in different places ſteep, bulging out, or hollow on the ſides; rounded, flattened, or irregular at top; and covered with wood, or broken by rocks. They are ſometimes ſeen in front; ſometimes in perſpective; falling back for the paſſage, or cloſing behind the bend of the river; appearing to meet, riſing above, or ſhooting out beyond one another. The wood which incloſes the lawn crowns an extenſive range of theſe hills, which overlook all thoſe on the oppoſite ſhore, with the country which appears above or between them; and winding themſelves as the river winds, their ſides, all rich and beautiful, are alternately exhibited; and the point of view in one ſpot becomes an object to the next.

In many places the principal feature is a continued rock, in length a quarter of a mile, perpendicular, high, and placed upon a height. To reſemble ruins is common to rocks: but no ruin of any ſingle ſtructure was ever equal to this enormous pile; it ſeems to be the remains of a city; and other ſmaller heaps ſcattered about it appear to be fainter traces of the former extent, and ſtrengthen the ſimilitude. It ſtretches along the brow which terminates the foreſt of Dean; the face of it is compoſed of immenſe blocks of ſtone, but not rugged; the top is bare and uneven, but not craggy; and from the foot of it, a declivity, covered with thicket, ſlopes gently towards the Wye, but in one part is abruptly broken off by a ledge of rocks, of a different hue, and in a different direction. From the grotto it ſeems to riſe immediately over a thick wood, which extends down a hill below the point of view, acroſs the valley through which the Wye flows, and up the oppoſite banks, hides the river, and continues without interruption to the bottom of the rock: from another ſeat it is ſeen by itſelf without even its baſe; it faces another, with all its appendages about it; and ſometimes the ſight of it is partially intercepted by trees, beyond which, at a diſtance, its long line continues on through all the openings between them.

Another capital object is the caſtle of Chepſtowe, a noble ruin of great extent; advanced to the very edge of a perpendicular rock, and ſo immediately rivetted into it, that from the top of the battlements down to the river ſeems but one precipice: the ſame ivy which overſpreads the face of the one, twines and cluſters among the fragments of the other; many towers, much of the walls, and large remains of the chapel, are ſtanding. Cloſe to it is a moſt romantic wooden bridge, very ancient, very groteſque, at an extraordinary height above the river, and ſeeming to abut againſt the ruins at one end, and ſome rocky hills at the other. The caſtle is ſo near to the alcove at Persfield, that little circumſtances in it may be diſcerned; from other ſpots more diſtant, even from the lawn, and from a ſhrubbery on the ſide of the lawn, it is diſtinctly viſible, and always beautiful, whether it is ſeen alone, or with the bridge, with the town, with more or with leſs of the rich meadows which lie along the banks of the Wye, to its junction three miles off with the Severn. A long ſweep of that river alſo, its red cliffs, and the fine riſing country in the counties of Somerſet and Glouceſter, generally terminate the proſpect. Riding.

Moſt of the hills about Persfield are full of rocks; ſome are intermixed with hanging woods, and either advance a little before them, or retire within them, and are backed, or overhung, or ſeparated by trees. In the walk to the cave, a long ſucceſſion of them is frequently ſeen in perſpective, all of a dark colour, and with wood in the intervals between them. In other parts the rocks are more wild and uncouth; and ſometimes they ſtand on the tops of the higheſt hills; at other times down as low as the river; they are homely objects in one ſpot, and appear only in the back-ground of another.

The woods concur with the rocks to render the ſcenes of Persfield romantic: the place everywhere abounds with them; they cover the tops of the hills; they hang on the ſteeps; or they fill the depths of the valleys. In one place they front, in another they riſe above, in another they ſink below the point of view; they are ſeen ſometimes retiring beyond each other, and darkening as they recede; and ſometimes an opening between two is cloſed by a third at a diſtance beyond them. A point, called the *Lover's Leap*, commands a continued ſurface of the thickeſt foliage, which overſpreads a vaſt hollow immediately underneath. Below the Chineſe ſeat the courſe of the Wye is in the ſhape of a horſe-ſhoe: it is on one ſide incloſed by a ſemicircular hanging wood; the direct ſteeps of a table-hill ſhut it in on the other; and the great rock fills the interval between them: in the midſt of this rude ſcene lies the peninſula formed by the river, a mile at the leaſt in length, and in the higheſt ſtate of cultivation: near the iſthmus the ground riſes conſiderably, and thence deſcends in a broken ſurface, till it flattens to the water's edge at the other extremity. The whole is divided into cornfields and paſtures; they are ſeparated by hedge-rows, coppices, and thickets; open clumps and ſingle trees ſtand out in the meadows; and houſes and other buildings, which belong to the farms, are ſcattered amongſt them: nature ſo cultivated, ſurrounded by nature ſo wild, compoſe a moſt lovely landſcape together.

The communications between theſe ſeveral points are generally by cloſe walks; but the covert ends near the Chineſe ſeat; and a path is afterwards conducted through the upper park to a ruſtic temple, which overlooks on one ſide ſome of the romantic views which have been deſcribed, and on the other the cultivated hills and valleys of Monmouthſhire. To the rude and magnificent ſcenes of nature now ſucceeds a pleaſant, fertile, and beautiful country, divided into incloſures, not covered with woods, nor broken by rocks and precipices, but only varied by eaſy ſwells and gentle declivities. Yet the proſpect is not tame: the hills in it are high; and it is bounded by a vaſt ſweep of the Severn, which is here viſible for many miles together, and receives in its courſe the Wye and the Avon.

From the temple a road leads to the Windcliff, an eminence much above the reſt, and commanding the whole in one view. The Wye runs at the foot of the hill; the peninſula lies juſt below; the deep boſom of the

Ridley. the Scripture at large, which is full in point; over part of the great lake appears; all its bays, its accompaniments, are seen; the country immediately beyond it is full of lovely woods; and the highest grounds in the counties of Somerset and Gloucester rise in the horizon. The river Severn is said to be, as it really is, above Chepstowe, three or four miles wide; below the town it spreads almost to a sea; the county of Monmouth is there the loftier shore, and between its beautiful hills appear at a great distance the mountains of Brecknock and Glamorganshire. In extent, variety, and grandeur, few prospects are equal to this. It comprehends all the noble scenes of Persfield, and is surpassed by some of the finest country in Britain. See Gloucestershire.

RIDLEY (Nicholas), bishop of London, and a martyr to the Reformation, was descended of an ancient family, and born in the beginning of the 16th century, at Willimoteswick in Northumberland. From the grammar-school at Newcastle upon Tyne, he was sent to Pembroke hall in Cambridge, in the year 1518, where he was supported by his uncle Dr Robert Ridley, fellow of Queen's college. In 1522 he took his first degree in arts; two years after, was elected fellow; and, in 1525, he commenced master of arts. In 1527, having taken orders, he was sent by his uncle, for further improvement, to the Sorbonne at Paris; from thence he went to Louvain, and continued abroad till the year 1529. On his return to Cambridge, he was chosen under-treasurer of the university; and, in 1533, was elected senior proctor. He afterwards proceeded bachelor of divinity, and was chosen chaplain of the university, orator, and *magister glomeriæ*. At this time he was much admired as a preacher and disputant. He lost his kind uncle in 1536; but was soon after patronised by Dr Cranmer, archbishop of Canterbury, who made him his domestic chaplain, and presented him to the vicarage of Herne in East Kent; where, we are told, he preached the doctrine of the Reformation. In 1540, having commenced doctor of divinity, he was made king's chaplain; and, in the same year, was elected master of his college in Cambridge. Soon after, Ridley was collated to a prebend in the church of Canterbury; and it was not long before he was accused in the bishop's court, at the instigation of bishop Gardiner, of preaching against the doctrine of the Six Articles. The matter being referred to Cranmer, Ridley was acquitted. In 1545, he was made a prebendary of Westminster abbey: in 1547 was presented, by the fellows of Pembroke-hall, to the living of Soham, in the diocese of Norwich; and the same year was consecrated bishop of Rochester. In 1550 he was translated to the see of London; in which year he was one of the commissioners for examining bishop Gardiner, and concurred in his deprivation. In the year 1552, our prelate returning from Cambridge, unfortunately for himself, paid a visit to the Princess, afterwards Queen Mary; to whom, prompted by his zeal for reformation, he expressed himself with too much freedom: for she was barely seated on the throne when Ridley was destined a victim to her revenge. Within a month of Latimer he was burnt alive at Oxford, on the 16th of October 1555. He wrote, 1. A treatise concerning images in churches. 2. Brief declaration of the Lord's Supper. 3. Certain godly and comfortable conferences between bishop Ridley and Mr Hugh Latimer, during their imprisonment. 4. A comparison between the comfortable doctrine of the Gospel and the traditions of the Popish religion; and other works.

RIFLE, in gunnery. See Gunnery, n° 36, *et seq.*

Rifle Right.

RIGA, a large, strong, populous, and rich town of the Russian empire, and capital of Livonia. It is a large trading place, and has a very considerable fortress; the trade is chiefly in corn, skins, leather, and naval stores. It was taken by the Russians in 1710, after they had blocked it up a long while, during which the inhabitants were afflicted with the plague. The castle is square, and defended by four towers and six bastions; besides which, it has a fine arsenal. The Protestants have still a handsome college here. It is seated on a large plain on the river Dwina. E. Long. 24. 25. N. Lat 57. 0.

RIGADOON, a gay and brisk dance, borrowed originally from Provence in France, and performed in figure by a man and woman.

RIGGING *of a Ship*, a general name given to all the ropes employed to support the masts, and to extend or reduce the sails, or arrange them to the disposition of the wind. The former, which are used to sustain the mast, remain usually in a fixed position, and are called *standing rigging*; such are the shrouds, stays, and back-stays. The latter, whose office is to manage the sails, by communicating with various blocks or pulleys, situated in different places of the masts, yards, shrouds, &c. are comprehended in the general term of *running rigging*; such are the braces, sheets, haliards, clue-lines, brails, &c.

In rigging a mast, the first thing usually fixed upon its head is a circular wreath or rope, called the *gromet*, or *collar*, which is firmly beat down upon the top of the hounds. The intent of this is to prevent the shrouds from being fretted or worn by the trestle-trees, or shoulders of the mast; after this are laid on the two pendents, from whose lower ends the main or fore tackles are suspended; and next, the shrouds of the starboard and larboard side, in pairs, alternately. The whole is covered by the stays, which are the largest ropes of the rigging. When a yard is to be rigged, a gromet is also driven first on each of its extremities; next to this are fitted on the horses, the braces, and lastly the lifts or top-sail sheet-blocks.

The principal objects to be considered in rigging a ship, appear to be strength, convenience, and simplicity: or, the properties of affording sufficient security to the masts, yards, and sails; of arranging the whole machinery in the most advantageous manner, to sustain the masts, and facilitate the management of the sails; and of avoiding perplexity, and rejecting whatever is superfluous or unnecessary. The perfection of this art, then, consists in retaining all those qualities, and in preserving a judicious medium between them. See Seamanship.

RIGHT, in geometry, signifies the same with Straight: thus, a straight line is called a right one.

RIGHT is a title conferred, 1. Together with *Reverend*, upon all bishops. 2. Together with *Honourable*, upon earls, viscounts, and barons. 3. By courtesy, together with *Honourable*, upon the sons of dukes, marquises

Right. quiſſes, and the eldeſt ſons of earls. 4. Together with *Honourable*, to the ſpeaker of the houſe of commons; but to no other commoner excepting thoſe who are members of his majeſty's moſt honourable privy-council; and the three lord mayors of London, York, and Dublin, and the lord provoſt of Edinburgh, during their office. See HONOURABLE and PROVOST.

Hereditary RIGHT. See HEREDITARY.

1 The term right explained. RIGHT is a word which, in the propriety of the Engliſh language, is uſed ſometimes as an adjective and ſometimes as a ſubſtantive. As an adjective it is nearly of the ſame import with *fit*, *ſuitable*, *becoming*, *proper*; and whilſt it expreſſes a quality, it indicates a relation*. Thus when we ſay that an action is *right*, we muſt not only know the nature of the action, but, if we ſpeak intelligibly, muſt alſo perceive its relation to the end for which it was performed; for an action may be *right* with one end in view which would be *wrong* with another. The conduct of that general would be *right*, who, to ſave an army that could not be otherwiſe ſaved, ſhould place a ſmall detachment in a ſtation where he knew they would all be inevitably cut off; but his conduct would be very *wrong* were he to throw away the life of a ſingle individual for any purpoſe, however important, which he knew how to accompliſh without ſuch a ſacrifice.

* See Rectitude.

Many philoſophers have talked of actions being *right* and *wrong* in the abſtract without regard to their natural conſequences; and converting the word into a ſubſtantive they have fancied an eternal rule of *right*, by which the morality of human conduct is in every particular caſe to be tried. But in theſe phraſes we can diſcover no meaning. Whatever is *right* muſt be ſo on *ſome account or other*; and whatever is *fit*, muſt be fit for ſome *purpoſe*. When he who reſts the foundation of virtue on the *moral ſenſe*, ſpeaks of an action being *right*, he muſt mean that it is ſuch as, through the medium of that ſenſe, will excite complacency in the mind of the agent, and gain to him the general approbation of mankind. When he who reſts moral obligation on the will of God, ſpeaks of ſome actions as *right* and of others as *wrong*, he muſt mean that the former are agreeable to the divine will, however made known to men, and the latter diſagreeable to it; and the man who deduces the laws of virtue from what he calls the *fitneſs of things*, muſt have ſome *end in view*, for which things are fit, and denominate actions *right* or *wrong* as they tend to promote or counteract that end.

But the word *right*, uſed as a ſubſtantive, has in common as well as in philoſophical language a ſignification which at firſt view appears to be very different from this. It denotes a *juſt claim* or an *honeſt poſſeſſion*. Thus we ſay, a father has a *right* to reverence from his children, a huſband to the love and fidelity of his wife, and a king to the allegiance of his ſubjects. But if we trace theſe *rights* to their ſource, we ſhall find that they are all laws of moral obligation, and that they are called *rights* only becauſe it is agreeable to the will of God, to the inſtinctive dictates of the moral ſenſe, or to the fitneſs of things, if ſuch a phraſe has any meaning, that children reverence their parents, that wives love their huſbands, and that ſubjects pay allegiance to their ſovereign. This will be apparent to any man who ſhall put to himſelf ſuch queſtions as theſe: "*Why* have parents a *right* to reverence from their children, huſbands to the love of their wives, and ſovereigns to the allegiance of their ſubjects?" As theſe queſtions contain in them nothing abſurd, it is obvious that they are each capable of a preciſe anſwer; but it is impoſſible to give to any of them an anſwer which ſhall have any meaning, and not imply that *right* and *obligation* are reciprocal, or, in other words, that wherever there is a *right* in *one perſon*, there is a correſponding *obligation* upon *others*. Thus to the queſtion, "Why have parents a right to reverence from their children?" it may be anſwered, "becauſe, under God, they were the authors of their children's being, and protected them from danger, and furniſhed them with neceſſaries, when they were in a ſtate ſo helpleſs that they could do nothing for themſelves." This anſwer conveys no other meaning than that there is an obligation upon children, in return for benefits received, to reverence their parents. But what is the ſource of this obligation? It can only be the will of God, the moral ſenſe, or the fitneſs of things.

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This view of the nature of right will enable us to form a proper judgment of the aſſertion of a late writer, "that man has no rights." The arguments by which this apparent paradox is maintained, are not merely ingenious and plauſible; they are abſolutely concluſive. But then our philoſopher, who never chooſes to travel in the beaten track, takes the word *right* in a ſenſe very different from that in which it has been uſed by all other men, and conſiders it as equivalent to *diſcretionary power*. "By the word *right* (ſays he) is underſtood a full and complete power of either doing a thing or omitting it, without the perſon's becoming liable to animadverſion or cenſure from another; that is, in other words, without his incurring any degree of turpitude or guilt." In this ſenſe of the word he affirms, and affirms truly, that a man has no rights, no diſcretionary power whatever, except in things of ſuch total indifference as, whether "he ſhall ſit on the right or on the left ſide of his fire, or dine on beef to day or to-morrow."

Godwin's Political Juſtice.

2 Rights of man.

A propoſition ſo evidently true as this, ſtood not in need of argument to ſupport it; but as his arguments are clearly expreſſed, and afford a complete confutation of ſome popular errors ſanctioned by the reſpectable phraſe *rights of man*, we ſhall give our readers an opportunity of ſtudying them in his own words.

"Political ſociety is founded on the principles of morality and juſtice. It is impoſſible for intellectual beings to be brought into coalition and intercourſe without a certain mode of conduct, adapted to their nature and connection, immediately becoming a duty incumbent on the parties concerned. Men would never have aſſociated if they had not imagined that, in conſequence of that aſſociation, they would mutually conduce to the advantage and happineſs of each other. This is the real purpoſe, the genuine baſis, of their intercourſe; and, as far as this purpoſe is anſwered, ſo far does ſociety anſwer the end of its inſtitution. There is only one poſtulate more that is neceſſary to bring us to a concluſive mode of reaſoning upon this ſubject. Whatever is meant by the term *right*, there can neither be oppoſite rights, nor rights and duties hoſtile to each other. The rights of one man cannot claſh with or be detrimental to the rights of another: for this, inſtead of reaſoning, would be aſſerting an important branch of truth and morality at the very outſet of the rights of man certain-

Right. It understood it to be, would be to reduce it to a heap of unintelligible jargon and inconsistency. If one man have a right to be free, another man cannot have a right to make him a slave; if one man have a right to inflict chastisement upon me, I cannot have a right to withdraw myself from chastisement; if my neighbour have a right to a sum of money in my possession, I cannot have a right to retain it in my pocket. It cannot be less incontrovertible, that I have no right to omit what my duty prescribes. From hence it inevitably follows that men have no rights.

"It is commonly said, 'that a man has a right to the disposal of his fortune, a right to the employment of his time, a right to the uncontrolled choice of his profession or pursuits.' But this can never be consistently affirmed till it can be shown that he has no duties prescribing and limiting his mode of proceeding in all these respects.

"In reality, nothing can appear more wonderful to a careful inquirer, than that two ideas so incompatible as *man* and *rights* should ever have been associated together. Certain it is, that one of them must be utterly exclusive and annihilatory of the other. Before we ascribe rights to man, we must conceive of him as a being endowed with intellect, and capable of discerning the differences and tendencies of things. But a being endowed with intellect, and capable of discerning the differences and tendencies of things, instantly becomes a moral being, and has duties incumbent on him to discharge: and duties and rights, as has already been shown, are absolutely exclusive of each other.

"It has been affirmed by the zealous advocates of liberty, 'that princes and magistrates have no rights;' and no position can be more incontrovertible. There is no situation of their lives that has not its correspondent duties. There is no power intrusted to them that they are not bound to exercise exclusively for the public good. It is strange, that persons adopting this principle did not go a step farther, and perceive that the same restrictions were applicable to subjects and citizens."

3 Read and

This reasoning is unanswerble; but it militates not against the *rights of man* in the usual acceptation of the words, which are never employed to denote discretionary power, but a just claim on the one hand, implying a corresponding obligation on the other. Whether the phrase be absolutely proper is not worth the debating; it is authorised by custom—the *jus et norma loquendi*—and is universally understood except by such as the demons of fiction, in the form of paradoxical writers on political justice, have been able to mislead by sophistical reasonings.

4 Various.

Rights, in the common acceptation of the word, are of various kinds: they are *natural* or *adventitious*, *alienable* or *unalienable*, *perfect* or *imperfect*, *particular* or *general*. See the article Liberty.

5 Natural rights.

Natural rights are those which a man has to his life, limbs, and liberty; to the produce of his personal labour; to the use, in common with others, of air, light, and water, &c. That every man has a natural right or just claim to these things, is evident from their being absolutely necessary to enable him to answer that purpose, whatever it may be, for which he was made a living and a rational being. This shows undeniably, that the Author of his nature designed that he should have the use of them, and that the man who should wantonly deprive him of any one of them, would be guilty of a breach of the divine law, as well as act inconsistently with the fitness things in every sense in which that phrase can possibly be understood. Right.

6 Adventitious rights.

Adventitious rights are those which a king has over his subjects, a general over his soldiers, a husband to the person and affections of his wife, and which every man has to the greater part of his property. That the rights of the king and the general are adventitious, is universally admitted. The rights of property have been considered elsewhere (see Property); and though the human constitution shows sufficiently that men and women have a natural right to the use of each other, yet it is evident that the exclusive right of any one man to any one woman, and *vice versa* must be an adventitious right: But the important question is, How are adventitious rights acquired?

7 How acquired.

In answer to this question, the moralist who deduces the laws of virtue from the will of God, observes, that as God appears from his works to be a benevolent Being, who wills the happiness of all his creatures (see Metaphysics, n° 312.), he must of course will every thing which naturally tends to promote that happiness. But the existence of civil society evidently contributes in a great dgree to promote the sum of human happiness (See Society); and therefore whatever is necessary for the support of civil society in general, or for the conduct of particular societies already established, must be agreeable to the will of God: But the allegiance of subjects to their sovereign, the obedience of soldiers to their leader, the protection of private property, and the fulfilling of contracts, are all absolutely necessary to the support of society; and hence the rights of kings, generals, husbands, and wives, &c. though adventitious, and immediately derived from human appointment, are not less sacred than natural rights since they may all be ultimately traced to the same source. The same conclusion may easily be drawn by the philosopher, who rests moral obligation on the fitness of things or on a moral sense; only it must in each of these cases partake of the instability of its foundation.

8 Objections to some of these rights

To the sacredness of the rights of marriage, an author already quoted has lately urged some declamatory objections. "It is absurd (says he) to expect, that the inclinations and wishes of two human beings should coincide through any long period of time. To oblige them to act and to live together, is to subject them to some inevitable portion of thwarting, bickering, and unhappiness. This cannot be otherwise, a long as man has failed to reach the standard of absolute perfection. The supposition that I must have a companion for life, is the result of a complication of vices. It is the dictate of cowardice, and not of fortitude. It flows from the desire of being loved and esteemed for something that is not desert.

"But the evil of marriage, as it is practised in European countries, lies deeper than this. The habit is, for a thoughtless and romantic youth of each sex to come together, to see each other for a few times, and under circumstances full of delusion, and then to vow to each other eternal attachment. What is the consequence of this? In almost every instance they find themselves deceived. They are reduced to make the best of an irretrievable mistake. They are presented with the strongest imaginable temptation to become the dupes

Right. of falſehood. They are led to conceive it their wiſeſt policy to ſhut their eyes upon realities; happy if by any perverſion of intellect they can perſuade themſelves that they were right in their firſt crude opinion of their companion. Right.

"So long as two human beings are forbidden by poſitive inſtitution to follow the dictates of their own mind, prejudice is alive and vigorous. So long as I ſeek to engroſs one woman to myſelf, and to prohibit my neighbour from proving his ſuperior deſert and reaping the fruits of it, I am guilty of the moſt odious of all monopolies. Over this imaginary prize men watch with perpetual jealouſy; and one man will find his deſires and his capacity to circumvent as much excited, as the other is excited to traverſe his projects and fruſtrate his hopes. As long as this ſtate of ſociety continues, philanthropy will be croſſed and checked in a thouſand ways, and the ſtill augmenting ſtream of abuſe will continue to flow.

"The abolition of marriage will be attended with no evils. The intercourſe of the ſexes will fall under the ſame ſyſtem as any other ſpecies of friendſhip. Excluſively of all groundleſs and obſtinate attachments, it will be impoſſible for me to live in the world without finding one man of a worth ſuperior to that of any other whom I have an opportunity of obſerving. To this man I ſhall feel a kindneſs in exact proportion to my apprehenſion of his worth. The caſe will be preciſely the ſame with reſpect to the female ſex; I ſhall aſſiduouſly cultivate the intercourſe of that woman whoſe accompliſhments ſhall ſtrike me in the moſt powerful manner. 'But it may happen that other men will feel for her the ſame preference that I do.' This will create no difficulty. We may all enjoy her converſation; and we ſhall all be wiſe enough to conſider the ſenſual intercourſe as a very trivial object. This, like every other affair in which two perſons are concerned, muſt be regulated in each ſucceſſive inſtance by the unforced conſent of either party. It is a mark of the extreme depravity of our preſent habits, that we are inclined to ſuppoſe the ſenſual intercourſe anywiſe material to the advantages ariſing from the pureſt affection. Reaſonable men now eat and drink, not from the love of pleaſure, but becauſe eating and drinking are eſſential to our healthful exiſtence. Reaſonable men then will propagate their ſpecies, not becauſe a certain ſenſible pleaſure is annexed to this action, but becauſe it is right the ſpecies ſhould be propagated and the manner in which they exereiſe this function will be regulated by the dictates of reaſon and duty."

9 Obviated. It is right then, according to this political innovator, that the ſpecies ſhould be propagated, and reaſonable men in his Utopian commonwealth would be incited by reaſon and duty to propagate them: but the way to fulfil this duty, experience, which is ſeldom at one with ſpeculative reformation, his already demonſtrated, not to conſiſt in the promiſcuous intercourſe of ſeveral men with one woman, but in the fidelity of individuals of the two ſexes to each other. Common proſtitutes among us ſeldom prove with child; and the ſociety of *Arreoys* in Otaheitee, who have completely diveſted themſelves of what our author calls *prejudice*, and are by no means guilty of his *moſt odious of all monopolies*, are for the moſt part childleſs (See Otaheitee). He ſeems to think that a ſtate of equal property would neceſſarily deſtroy our reliſh for luxury, decreaſe our inordinate appetites of every kind, and lead us univerſally to prefer the pleaſures of intellect to the pleaſures of ſenſe. But here again experience is againſt him. The *Arreoys* who have a property in their women perfectly equal, are the moſt luxurious and ſenſual wretches on the face of the earth; ſenſual indeed to a degree of which the moſt libidinous European can hardly form a conception. Right.

By admitting it to be a duty to propagate the ſpecies, our author muſt neceſſarily grant that every thing is right which is requiſite to the fulfilling of that duty, and the contrary wrong. If ſo, promiſcuous concubinage is wrong, ſince we have ſeen, that by a law of nature it is incompatible with the duty; whence it follows on his own principles, that the ſexual union by pairs muſt be right. The only queſtion therefore to be decided between him and his opponents is, "Whether ſhould that union be temporary or permanent?" And we think the following obſervations by Mr Paley ſufficient to decide it to the conviction of every perſon not blinded by the rage of innovation.

"A lawgiver, whoſe counſels were directed by views of general utility, and obſtructed by no local impediments, would make the marriage-contract indiſſoluble during the joint lives of the parties, for the ſake of the following advantages: Such a union tends to preſerve peace and concord between married perſons, by perpetuating their common intereſt, and by inducing a neceſſity of mutual compliance. An earlier termination of it would produce a ſeparate intereſt. The wife would naturally look forward to the diſſolution of the partnerſhip, and endeavour to draw to herſelf a fund againſt the time when ſhe was no longer to have acceſs to the ſame reſources. This would beget ſpeculation on one ſide, and miſtruſt on the other; evils which at preſent very little diſturb the confidence of married life. The ſecond effect of making the union determinable only by death, is not leſs beneficial. It neceſſarily happens, the adverſe tempers, habits, and taſtes, oftentimes meet, in marriage. In which caſe each party muſt take pains to give up what offends, and practice what may gratify, the other. A man and woman in love with each other do this inſenſibly: but love is neither general nor durable; and where this is wanting, no leſſons of duty, no delicacy of ſentiment, will go half ſo far with the generality of mankind and womankind as this one intelligible reflection, that they muſt each make the beſt of their bargain; and that ſeeing they muſt either both be miſerable or both ſhare in the ſame happineſs neither can find their own comfort but in promoting the pleaſure of the other. Theſe compliances, though at firſt extorted by neceſſity, become in time eaſy and mutual; and though leſs endearing than aſſiduities which take their riſe from affection, generally procure to the married pair a repoſe and ſatisfaction ſufficient for their happineſs."

So differently from our author does this judicious writer reaſon concerning the effects of a permanent union on the tempers of the married pair. Inſtead of ſubjecting them to ſome inevitable portion of thwarting, bickering, and unhappineſs, it lays them, in his opinion, under the neceſſity of curbing their unruly paſſions, and acquiring habits of gentleneſs, forbearance, and peace. To this we may add, that both believing the

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all children propagated during their marriage to be their own (a belief unattainable by the father in a ſtate of promiſcuous concubinage), they come by a natural power of the human paſſions (ſee PASSION) to love each other through the medium of their offspring. But it is the duty of man to acquire a right that gives them pleaſure, gratitude, and eaſe to be exerted, it muſt be agreeable to the will of God, and a branch of the firſt of things, that the ſocial union ſhall daily bring the moſt bleſſings to the parties; and therefore the excluſive right of marriage, though adventitious, muſt be equally ranked with thoſe which are natural.

But to return from this digreſſion, into which the importance of the ſubject led us, *rights*, beſides being natural or adventitious, are likewiſe *alienable* or *unalienable*. Every man, when he becomes the member of a civil community, alienates a part of his natural rights. In a ſtate of nature, no man has a ſuperior on earth, and each has a right to defend his life, liberty, and property, by all the means which nature has put in his power. In civil ſociety, however, theſe rights are all transferred to the laws and the magiſtrate, except in caſes of ſuch extreme urgency as leave not time for legal interpoſition. This ſingle conſideration is ſufficient to ſhew, that the right to civil liberty is alienable; though, in the vehemence of men's zeal for it, and in the language of ſome political remonſtrances, it has often been pronounced to be an unalienable right. "The true reaſon (ſays Mr Paley) why mankind hold in deteſtation the memory of thoſe who have ſold their liberty to a tyrant is, that, together with their own, they ſold effectually or endangered the liberty of others; of which they had certainly no right to diſpoſe." The rights of a prince over his people, and of a huſband over his wife, are generally and naturally unalienable.

11 Perfect and imperfect.

Another diviſion of rights is into thoſe which are perfect and thoſe which are imperfect. Perfect rights are ſuch as may be preciſely aſcertained and aſſerted by force, or in civil ſociety by the courſe of law. To imperfect rights neither force nor law is applicable. A man's rights to his life, perſon, and property, are all perfect; for if any of theſe be attacked, he may repel the attack by inſtant violence, puniſh the aggreſſor by the courſe of law, or compel the author of the injury to make reſtitution or ſatisfaction. A woman's right to her honour is likewiſe perfect; for if ſhe cannot otherwiſe eſcape, ſhe may kill the ravither. Every poor man has undoubted right to relief from the rich; but his right is imperfect, for if the relief be not voluntarily given, he cannot compel it either by law or by violence. There is no duty upon which the Chriſtian religion puts a greater value than that of giving; and every preacher of the goſpel has an undoubted right to inculcate the practice of it upon his audience; but even this right is imperfect, for he cannot refuſe the communion to a man merely on account of his illiberality to the poor, as he can to another for the neglect of any duty comprehended under the term juſtice. In elections or appointments to offices, where the qualifications are preſcribed, the beſt qualified candidate has unqueſtionably a right to ſucceed; yet if he be rejected, he can neither ſeize the office by force, nor obtain redreſs at law. His right, therefore, is imperfect.

Here a queſtion naturally offers itſelf to our conſideration: "How comes a perſon to have a right to a thing, and yet have no right to uſe the means neceſſary to obtain it?" The anſwer is, That in ſuch caſes the object or the circumſtances of the right are ſo indeterminate, that the permiſſion of force, even where the right is real and certain, would lead to force in other caſes where there exiſts no right at all. Thus, though the poor man has a right to relief, who ſhall aſcertain the mode, ſeaſon, and quantum of it, or the perſon by whom it ſhall be adminiſtered? Theſe things muſt be aſcertained before the right to relief can be enforced by law; but to allow them to be aſcertained by the poor themſelves, would be to expoſe property to endleſs claims. In like manner, the comparative qualifications of the candidate muſt be aſcertained, before he can enforce his right to the office; but to allow him to aſcertain his qualifications himſelf, would be to make him judge in his own cauſe between himſelf and his neighbour.

12 Imperfect rights equally ſacred with thoſe which are perfect.

Wherever the right is imperfect on one ſide, the correſponding obligation on the other muſt be imperfect likewiſe. The violation of it, however, is often not leſs criminal in a moral and religious view than of a perfect obligation. It is well obſerved by Mr Paley, that greater guilt is incurred by diſappointing a worthy candidate of a place upon which perhaps his livelihood depends, and in which he could eminently ſerve the public, than by filching a book out of a library or picking a pocket of a handkerchief. The ſame ſentiment has been expreſſed by Mr Godwin, but in terms by much too ſtrong, and ſuch as ſhow that he was not at the time complete maſter of his ſubject. "My neighbour (ſays he) has juſt as much right to put an end to my exiſtence with dagger or poiſon, as to deny me that pecuniary aſſiſtance without which I muſt ſtarve, or as to deny me that aſſiſtance without which my intellectual attainments, or my moral exertions, will be materially injured. He has juſt as much right to amuſe himſelf with burning my houſe, or torturing my children upon the rack, as to ſhut himſelf up in a cell, careleſs about his fellow men, and to hide 'his talent in a napkin."

It is certainly true, that the man who ſhould ſuffer another to ſtarve for want of that relief which he *knew* that he *alone* could afford him, would be guilty of murder, and murder of the cruelleſt kind; but there is an immenſe difference between depriving ſociety of one of its members, and withholding from that member what might be neceſſary to enable him to make the greateſt poſſible intellectual attainments. Newton might have been uſeful and happy though he had never been acquainted with the elements of mathematics; and the late celebrated Mr Ferguſon might have been a valuable member of ſociety, though he had never emerged from his original condition of a ſhepherd. The remainder of the paragraph is too abſurd to require a formal confutation. Had our author, burying his talent in a napkin, ſhut himſelf up ſeven years ago in a cell, careleſs about his fellow men and *political juſtice*, he would have deprived the public of what he deſerved to be more perfect in than any; but had he at that period ſecluded himſelf with burning his neighbour's houſe, and torturing on the rack two or three children, he would have cut off, for any thing he could know, two or three future Newtons, and have left both the intellectual and the corporeal

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of ten Newtons to be equal to that of one Godwin, we are warranted to ſay, that however great his merit may be, they are not infinite, and that the addition of thoſe of one Newton to them would undoubtedly increaſe their ſum.

13 Rights particular and general.

Rights, are particular or general. Particular rights are ſuch as belong to certain individuals or orders of men, and not to others. The rights of kings, of maſters, of huſbands, of wives, and, in ſhort, all the rights which originate in ſociety, are particular. General rights are thoſe which belong to the ſpecies collectively. Such are our rights to the vegetable produce of the earth, and to the fleſh of animals for food, though about the origin of this latter right there has been much diverſity of opinion, which we have noticed in another place. (See Theology, Part I. ſect. 2d). If the vegetable produce of the earth be included under the general rights of mankind, it is plain that he is guilty of wrong who leaves any conſiderable portion of land waſte merely for his own amuſement: he is leſſening the common ſtock of proviſion which Providence intended to diſtribute among the ſpecies. On this principle it would not be eaſy to vindicate certain regulations reſpecting game, as well as ſome other monopolies which are protected by the municipal laws of moſt countries. Mr Paley, by juſt reaſoning, has eſtabliſhed this concluſion, "that nothing ought to be made excluſive property which can be conveniently enjoyed in common." An equal diviſion of land, however, the dream of ſome viſionary reformers, would be injurious to the general rights of mankind, as it may be demonſtrated, that it would leſſen the common ſtock of proviſions, by laying every man under the neceſſity of being his own weaver, tailor, ſhoemaker, ſmith, and carpenter, as well as ploughman, miller, and baker. Among the general rights of mankind, is the right of *neceſſity*; by which a man may uſe or deſtroy his neighbour's property when it is abſolutely neceſſary for his own preſervation. It is on this principle that goods are thrown overboard to ſave the ſhip, and houſes pulled down to ſtop the progreſs of a fire. In ſuch caſes, however, at leaſt in the laſt, reſtitution ought to be made when it is in our power; but this reſtitution will not extend to the original value of the property deſtroyed, but only to what it was worth at the time of deſtroying it, which, conſidering its danger, might be very little.

14 Rights of neceſſity.

RIGHTEOUSNESS, means juſtice, honeſty, virtue, goodneſs, and amongſt Chriſtians is of exactly the ſame import with holineſs, without which, we are told, no man ſhall ſee the Lord. The doctrine of the fall, and of redemption through Jeſus Chriſt, has occaſioned much diſputation, and given riſe to many ſingular notions in the world. The haughty philoſopher, diſſatisfied with myſteries, and with the humiliating doctrine of atonement by a crucified Saviour, has made a religion for himſelf, which he calls *rational Chriſtianity*; and the enthuſiaſt, by extracting doctrines from Scripture which are not contained in it, and which are repugnant to its ſpirit, has given too much countenance to this preſumption. The doctrine of imputed righteouſneſs, by which the merit of Chriſt is ſaid to be imputed to us, appears to be of this number; and though it has been held by many good, and by ſome learned men, it is certainly in general unfriendly to virtue as will be readily allowed by all who have converſed with the more ignorant ſort of Methodiſts in England or Seceders in Scotland. That it does not follow from the doctrine of the atonement, and conſequently that it has no foundation in Scripture, will appear elſewhere. See Theology.

Rights || Rigoll.

Bill of Rights, in law, is a declaration delivered by the lords and commons to the prince and princeſs of Orange, 13th February 1688; and afterwards enacted in parliament, when they became king and queen. It ſets forth, that king James did, by the aſſiſtance of divers evil counſellors, endeavour to ſubvert the laws and liberties of this kingdom, by exerciſing a power of diſpenſing with and ſuſpending of laws; by levying money for the uſe of the crown by pretence of prerogative without conſent of parliament; by proſecuting thoſe who petitioned the king, and diſcouraging petitions; by raiſing and keeping a ſtanding army in time of peace; by violating the freedom of election of members to ſerve in parliament; by violent proſecutions in the court of king's bench; and cauſing partial and corrupt jurors to be returned on trials, exceſſive bail to be taken, exceſſive fines to be impoſed, and cruel puniſhments inflicted; all which were declared to be illegal. And the declaration concludes in theſe remarkable words; "And they do claim, demand, and inſiſt upon, all and ſingular the premiſes, as their undoubted rights and liberties." And the act of parliament itſelf (1 W. & M. ſtat. 2. cap. 2.) recognizes "all and ſingular the rights and liberties, aſſerted and claimed in the ſaid declaration, to be the true, ancient, indubitable rights of the people of this kingdom." See Liberty.

RIGIDITY, in phyſics, denotes a brittle hardneſs. It is oppoſed to ductility, malleability, and ſoftneſs.

RIGOLL, or Regals, a kind of muſical inſtrument, conſiſting of ſeveral ſticks bound together, only ſeparated by beads. It is tolerably harmonious, being well ſtruck with a ball at the end of a ſtick. Such is the account which Graſſineau gives of this inſtrument. Skinner, upon the authority of an old Engliſh dictionary, repreſents it as a clavichord, or claricord; poſſibly founding his opinion on the nature of the office of the tuner of the regals, who ſtill ſubſiſts in the eſtabliſhment of the king's chapel at St James's, and whoſe buſineſs is to keep the organ of the chapel royal in tune; and not knowing that ſuch wind inſtruments as the organ need frequent tuning, as well as the clavichord and other ſtringed inſtruments. Sir Henry Spelman derives the word *rigoll* from the Italian *rigabello*, a muſical inſtrument, anciently uſed in churches inſtead of the organ. Walther, in his deſcription of the regal, makes it to be a reed-work in an organ, with metal and alſo wooden pipes and bellows adapted to it. And he adds, that the name of it is ſuppoſed to be owing to its having been preſented by the inventor to ſome king.—From an account of the regal uſed in Germany, and other parts of Europe, it appears to conſiſt of pipes and keys on one ſide, and the bellows and wind-cheſt on the other. We may add, that Lord Bacon (Nat. Hiſt. cent. ii. §. 102.) diſtinguiſhes between the regal and organ, in a manner which ſhows them to be inſtruments of the ſame claſs. Upon the whole, there is reaſon to conclude, that the regal or rigoll was a pneumatic, and not a ſtringed inſtrument.

Merſennus relates, that the Flemings invented an inſtrument, *les regales de bois*, conſiſting of 17 cylindrical

pieces

Rigor Rings

pieces of wood, decreaſing gradually in length, ſo as to produce a ſucceſſion of tones and ſemitones in the diatonic ſeries, which had keys, and was played on as a ſpinet; the hint of which, he ſays, was taken from an inſtrument in uſe among the Turks, conſiſting of 12 wooden cylinders, of different lengths, ſtrung together, which being ſuſpended and ſtruck with a ſtick, having a ball at the end, produced muſic. Hawkins's Hiſt. Muſ. vol. ii. p. 449.

RIGOR, in medicine, a convulſive ſhuddering from ſevere cold, an ague fit, or other diſorder.

RIMINI, an ancient, populous, and handſome town of Italy, in Romagna, which is part of the territory of the church, with a biſhop's ſee, an old caſtle, and a ſtrong tower; as alſo many remains of antiquity, and very fine buildings. It is famous for a council in 1359, conſiſting of 400 biſhops, who were all Arians except 20. It is ſeated in a fertile plain, at the mount of the river Marecchia, on the gulph of Venice. E. Long. 12. 39. N. Lat. 44. 6.

RIND, the ſkin of any fruit that may be cut off or pared. Rind is alſo uſed for the inner bark of trees, or that whitiſh ſoft ſubſtance which adheres immediately to the wood. See PLANT.

RING, an ornament of gold and ſilver, of a circular figure, and uſually worn on the finger.

The epiſcopal ring (which makes a part of the pontifical apparatus, and is eſteemed a pledge of the ſpiritual marriage between the biſhop and his church) is of very ancient ſtanding. The fourth council of Toledo, held in 633, appoints, that a biſhop condemned by one council, and found afterwards innocent by a ſecond, ſhall be reſtored, by giving him the ring, ſtaff, &c. From biſhops, the cuſtom of the ring has paſſed to cardinals, who are to pay a very great ſum *pro jure annuli cardinalitii*.

RINGS. The antiquity of rings is known from Scripture and profane authors. Judah left his ring or ſignet with Tamar (Gen. xxxviii. 18). When Pharaoh committed the government of all Egypt to Joſeph, he took his ring from his finger, and gave it to Joſeph (Gen. xli. 42). After the victory that the Iſraelites obtained over the Midianites, they offered to the Lord the rings, the bracelets, and the golden necklaces, and the ear-rings, that they had taken from the enemy (Numb. xxxi. 50). The Iſraelitiſh women wore rings not only on their fingers, but alſo in their noſtrils and their ears. St James diſtinguiſhes a man of wealth and dignity by the ring of gold that he wore on his finger (James ii. 2). At the return of the prodigal ſon, his father orders him to be dreſſed in a new ſuit of clothes, and to have a ring put upon his finger (Luke xv. 22). When the Lord threatened King Jeconiah with the utmoſt effects of his anger, he tells him, that though he were the ſignet or ring upon his finger, yet he ſhould be torn off (Jer. xxii. 24.)

The ring was uſed chiefly to ſeal with: and the Scripture generally puts it in the hands of princes and great perſons; as the king of Egypt, Joſeph; Ahaz, Jezebel, King Ahaſuerus, his favourite Haman, Mordecai, who ſucceeded Haman in his dignity, King Darius (1 Kings xxi. 8.; Eſther iii. 10, &c.; Dan. vi. 17). The patents and orders of theſe princes were ſealed with their rings or ſignets; and it was this that ſecured to them their authority and reſpect. See the article SEAL.

Ring-Bone. See FARRIERY, Sect. xxxi.

Ring-Ouſel, in ornithology, a ſpecies of TURDUS.

RIO-GRANDE, a river of Africa, which runs from eaſt to weſt through Negroland, and falls into the Atlantic ocean, in 11 degrees of latitude. Some take it to be a branch of the Niger, of which there is not the leaſt proof. Rio Grande ‖ Rom.

Rio-Grande, a river of South America, in Braſil, which has its ſource in an unknown country: it croſſes the captainſhip of Rio-Grande, and falls into the ſea at Natal los Reyes.

Rio-Janeiro, a river of South America, which riſes in the mountains weſt of Braſil, and running eaſt through that country, falls into the Atlantic Ocean, in S. Lat. 23. 30. The province of Janeiro is one of the richeſt in Braſil; and produces gold, ſilver, diamonds, and other precious ſtones.

RIOM, a town of France, in Auvergne; ſeated on a hill, in ſo agreeable a country, that it is called the *garden of Auvergne*. E. Long. 3. 12. N. Lat. 45. 51.

RIOT, in law. The riotous aſſembling of 12 perſons, or more, and not diſperſing upon proclamation, was firſt made high treaſon by ſtatute 5 & 4 Edw. VI. c. 5. when the king was a minor, and a change of religion to be effected: but that ſtatute was repealed by ſtatute 1 Mar. c. 1. among the other treaſons created ſince the 25 Edw. III.; though the prohibition was in ſubſtance re-enacted, with an inferior degree of puniſhment, by ſtatute 1 Mar. ſt. 2. c. 12. which made the ſame offence a ſingle felony. Theſe ſtatutes ſpecified and particularized the nature of the riots they were meant to ſuppreſs; as, for example, ſuch as were ſet on foot with intention to offer violence to the privy-council, or to change the laws of the kingdom, or for certain other ſpecific purpoſes; in which caſes, if the perſons were commanded by proclamation to diſperſe, and they did not, it was by the ſtatute of Mary made felony, but within the benefit of clergy; and alſo the act indemnified the peace-officers and their aſſiſtants, if they killed any of the mob in endeavouring to ſuppreſs ſuch riot. This was thought a neceſſary ſecurity in that ſanguinary reign, when popery was intended to be re-eſtabliſhed, which was like to produce great diſcontents: but at firſt it was made only for a year, and was afterwards continued for that queen's life. And, by ſtatute 1 Eliz. c. 16. when a reformation in religion was to be once more attempted, it was revived and continued during her life alſo; and then expired. From the acceſſion of James I. to the death of Queen Anne, it was never once thought expedient to revive it; but, in the firſt year of George I. it was judged neceſſary, in order to ſupport the execution of the act of ſettlement, to renew it, and at one ſtroke to make it perpetual, with large additions. For whereas the former acts expreſsly defined and ſpecified what ſhould be accounted a riot, the ſtatute 1 Geo. I. c. 5. enacts, generally, that if any 15 perſons are unlawfully aſſembled to the diſturbance of the peace, and any one juſtice of the peace, ſheriff, under ſheriff, or mayor of a town, ſhall think proper to command them by proclamation to diſperſe, if they contemn his orders and continue together for one hour afterwards, ſuch contempt ſhall be felony without benefit of clergy. And farther, if the reading of the proclamation be by force oppoſed, or the reader be in any manner wilfully hindered

Riot, Ripen.

hindered from the reading of it, such opposers and hinderers are felons without benefit of clergy; and all persons to whom such proclamation *ought to have been made*, and knowing of such hindrance, and not dispersing, are felons without benefit of clergy. There is the like indemnifying clause, in case any of the mob be unfortunately killed in the endeavour to disperse them; being copied from the act of queen Mary. And by a subsequent clause of the new act, if any person, so riotously assembled, begin even before proclamation to pull down any church, chapel, meeting-house, dwelling-house, or out-houses, they shall be felons without benefit of clergy.

Riots, routs, and unlawful assemblies, must have three persons at least to constitute them. An *unlawful assembly* is, when three, or more, do assemble themselves together to do an unlawful act, as to pull down inclosures, to destroy a warren or the game therein; and part without doing it, or making any motion towards it. A *rout* is where three or more meet to do an unlawful act upon a common quarrel, as forcibly breaking down fences upon a right claimed of common, or of way, and make some advances towards it. A *riot* is where three or more actually do an unlawful act of violence, either with or without a common cause or quarrel; as if they beat a man; or hunt and kill game in another's park, chase, warren, or liberty; or do any other unlawful act with force and violence; or even do a lawful act, as removing a nuisance, in a violent and tumultuous manner. The punishment of unlawful assembling, if to the number of 12, we have just now seen, may be capital, according to the circumstances that attend it; but, from the number of three to eleven, is by fine and imprisonment only. The same is the case in riots and routs by the common law; to which the pillory in very enormous cases has been sometimes superadded. And by the statute 13 Hen. IV. c. 7. any two justices, together with the sheriff or under-sheriff of the county, may come with the *posse comitatus*, if need be, and suppress any such riot, assembly, or rout, arrest the rioters, and record upon the spot the nature and circumstances of the whole transaction; which record alone shall be a sufficient conviction of the offenders. In the interpretation of which statute it hath been holden, that all persons, noblemen and others, except women, clergymen, persons decrepid, and infants under 15, are bound to attend the justices in suppressing a riot, upon pain of fine and imprisonment; and that any battery, wounding, or killing the rioters, that may happen in suppressing the riot, is justifiable. So that our ancient law, previous to the modern riot-act, seems pretty well to have guarded against any violent breach of the public peace; especially as any riotous assembly on a public or general account, as to redress grievances or pull down all inclosures, and also resisting the king's forces if sent to keep the peace, may amount to overt acts of high treason, by levying war against the king.

RIPEN, a town of Denmark, in north Jutland, and capital of a diocese of the same name, with a bishop's see, a good harbour, a castle, two colleges, and a public library. The tombs of several of the kings of Denmark are in the cathedral church, which is a very handsome structure. The harbour, which has contributed greatly to the prosperity of this place, is at a small distance, being seated at the mouth of the river Nipsaa, in a country which supplies the best beeves in Denmark. It is 45 miles north-west of Slesvick and 25 south-by-west of Wiburg. E. Long. 8. 94. N. Lat. 55. 25. The diocese is bounded on the north by those of Wiburg and Athuys, on the south by the duchy of Slesvick, and on the east and west by the sea.

Ripening of Grain.

RIPENING *of Grain*, means its arriving to maturity. The following paper, which appeared in the first volume of the Transactions of the Royal Society of Edinburgh, is worthy the attention of farmers in cold countries; where it frequently happens, from continued rains, that the corn is quite green when the frost sets in; in consequence of which, the farmers cut it down, without thinking it can possibly arrive at further maturity.

"Summer 1782 having been remarkably cold and unfavourable, the harvest was very late, and much of the grain, especially oats, was green even in October. In the beginning of October the cold was so great, that, in one night, there was produced on ponds near Kinneil, in the neighbourhood of Borrowstounness, ice three quarters of an inch thick. It was apprehended by many farmers, that such a degree of cold would effectually prevent the further filling and ripening of their corn. In order to ascertain this point, Dr Roebuck selected several stalks of oats, of nearly equal fulness, and immediately cut those which, on the most attentive comparison, appeared the best, and marked the others, but allowed them to remain in the field 14 days longer; at the end of which time they, too, were cut, and kept in a dry room for 10 days. The grains of each parcel were then weighed; when 11 of the grains which had been left standing in the field were found to be equal in weight to 30 of the grains which had been cut a fortnight sooner, though even the best of the grains were far from being ripe. During that fortnight (viz. from October 7th to October 21st) the average heat, according to Fahrenheit's thermometer, which was observed every day at eight o'clock in the morning and six in the evening, was a little above 43. Dr Roebuck observes, that this ripening and filling of corn in so low a temperature should be the less surprising to us, when we reflect, that seed-corn will vegetate in the same degree of heat; and he draws an important inference from his observations, viz. That farmers should be cautious of cutting down their unripe corn, on the supposition that in a cold autumn it could fill no more."

A writer in the Scots Magazine for June 1792, under the signature of *Agricola*, when speaking on this subject, adds the following piece of information, viz. "That grain cut down before it is quite ripe will grow or spring equally well as ripe and plump grain, provided it is properly preserved. I relate this from a fact, and also on the authority of one of the most judicious and experienced farmers in this island, William Craik of Arbigland, Esq; near Dumfries, who was taught by such a season as this threatens to prove. This being the case, every wise economical farmer will preserve his ripe and plump grain for bread, and sow the green and seemingly shrivelled grain, with a perfect conviction that the plants proceeding from such seed will yield as strong and thriving corn as what grows from plump seed. By this means the farmer will enjoy the double advantage of having the corn most productive in flour for bread, and

Riphæan. Risible.

his light shrivelled grain will go much farther in seed than the plump grain would do. I saw the experiment made on wheat which was so shriveled that it was thought scarcely worth giving to fowls, and yet produced heavy large ears."

RIPHŒAN MOUNTAINS, are a chain of high mountains in Russia, to the north east of the river Oby, where there are said to be the finest sables of the whole empire.

RIPHATH, or RIPHAT, second son of Gomer, and grandson of Japhet (Gen. x. 3. רפת *Riphat*). In most copies he is called *Diphath* in the Chronicles (1 Chr. i. 6. דפת *Diphat*). The resemblance of the two Hebrew letters ר *Resh* and ד *Daleth* is so much, that they are very often confounded. But, to the credit of the translators of our English version be it said, that in this instance, as well as in many others, they have restored the original reading, and rendered it Riphath. The learned are not agreed about the country that was peopled by the descendants of Riphath. The Chaldee and Arabic take it for France; Eusebius for the country of the Sauromatæ; the Chronicon Alexandrinum for that of the Garamantæ; Josephus for Paphlagonia. Mela assures us, that anciently the people of this province were called *Riphatæi*, or Riphaces; and in Bithynia, bordering upon Paphlagonia, may be found the river Rhebeus, a people called *Rhebentes*, and a canton of the same name. These reasons have prevailed with Bochart to believe, that Riphath peopled Paphlagonia. Others think he peopled the Montes Riphei; and this opinion seems the most reasonable to us, because the other sons of Gomer peopled the northern countries towards Scythia, and beyond the Euxine sea.

RISIBLE, any thing capable of exciting laughter.

Ludicrous is a general term, signifying, as may appear from its derivation, what is playsome, sportive, or jocular. *Ludicrous* therefore seems the genus, of which *risible* is a species, limited as above to what makes us laugh.

However easy it may be, concerning any particular object, to say whether it be risible or not, it seems difficult, if at all practicable, to establish any general character, by which objects of that kind may be distinguished from others. Nor is that a singular case; for, upon a review, we find the same difficulty in most of the articles already handled. There is nothing more easy, viewing a particular object, than to pronounce that it is beautiful or ugly, grand or little: but were we to attempt general rules for ranging objects under different classes according to these qualities, we should be much gravelled. A separate cause increases the difficulty of distinguishing risible objects by a general character: all men are not equally affected by risible objects, nor the same man at all times; for in high spirits a thing will make him laugh outright, which will scarce provoke a smile in a grave mood. Risible objects, however, are circumscribed within certain limits. No object is risible but what appears slight, little, or trivial; for we laugh at nothing that is of importance to our own interest or to that of others. A real distress raises pity, and therefore cannot be risible; but a slight or imaginary distress, which moves not pity, is risible. The adventure of the fulling-mills in Don Quixote, is extremely risible; so is the scene where Sancho, in a dark night tumbling into a pit, and attaching himself to the side by hand and foot, hangs there in terrible dismay till the morning, when he discovers himself to be within a foot of the bottom. A nose remarkably long or short, is risible; but to want it altogether, so far from provoking laughter, raises horror in the spectator. With respect to works both of nature and of art, none of them are risible but what are out of rule; some remarkable defect or excess, a very long visage, for example, or a very short one. Hence nothing just, proper, decent, beautiful, proportioned, or grand, is risible.

Even from this slight sketch it will be readily conjectured, that the emotion raised by a risible object is of a nature so singular, as scarce to find place while the mind is occupied with any other passion or emotion; and the conjecture is verified by experience; for we scarce ever find that emotion blended with any other. One emotion we must except; and that is, contempt raised by certain improprieties: every improper act inspires us with some degree of contempt for the author; and if an improper act be at the same time risible to provoke laughter, of which blunders and absurdities are noted instances, the two emotions of contempt and of laughter unite intimately in the mind, and produce externally what is termed a *laugh of derision* or *of scorn*. Hence objects that cause laughter may be distinguished into two kinds: they are either *risible* or *ridiculous*. A risible object is mirthful only; a ridiculous object is both mirthful and contemptible. The first raises an emotion of laughter that is altogether pleasant: the pleasant emotion of laughter raised by the other, is blended with the painful emotion of contempt; and the mixed emotion is termed *the emotion of ridicule*. The pain a ridiculous object gives me, is resented and punished by a laugh of derision. A risible object, on the other hand, gives me no pain: it is altogether pleasant by a certain sort of titillation, which is expressed externally by mirthful laughter. See RIDICULE.

Risible objects are so common, and so well understood, that it is unnecessary to consume paper or time upon them. Take the few following examples:

Falstaff. I do remember him at Clement's inn, like a man made after supper of a cheese-paring. When he was naked, he was for all the world like a forked radish, with a head fantastically carved upon it with a knife. *Second Part, Henry* IV. *act.* 3. *sc.* 5.

The foregoing is of disproportion. The following examples are of slight or imaginary misfortunes.

Falstaff. Go fetch me a quart of sack, put a toast in't. Have I lived to be carried in a basket, like a barrow of butcher's offal, and to be thrown into the Thames! Well, if I be served such another trick I'll have my brains ta'en out and butter'd, and give them to a dog for a new-year's gift. The rogues slighted me into the river with as little remorse as they would have drown'd a bitch's blind puppies, fifteen i'th'litter; and you may know by my size that I have a kind of alacrity in sinking; if the bottom were as deep as hell, I should down. I had been drowned, but that the shore was shelvy and shallow; a death that I abhor: for the water swells a man; and what a thing should I have been when I had been swelled? I should have been a mountain of mummy.

Merry Wives of Windsor. act 3. *sc.* 15.

Falstaff.

Riſſible || River.

Falſtaff. Nay, you ſhall hear, Maſter Brook, what I have ſuffer'd to bring this woman to evil for your good. Being thus crammed in the baiket, a coupie of Ford's knaves, his hinds, were call'd forth by their miſtreſs, to carry me in the name of foul clothes to Datchet-lane. They took me on their ſhoulders, met the jealous knave their maſter in the door, who aſk'd them once or twice what they had in their baſket. I quak'd for fear, leaſt the lunatic knave would have ſearch'd it; but Fate, ordaining he ſhould be a cuckold, held his hand. Well, on went he for a ſearch, and away went I for foul clothes. But mark the ſequel, Maſter Brook. I ſuffer'd the pangs of three egregious deaths: firſt, an intolerable fright, to be detected by a jealous rotten bell-weather; next, to be compaſs'd like a good bilbo, in the circumference of a peck hilt to point, heel to head; and then to be ſtopt in, like a ſtrong diſtillation, with ſtinking clothes that fretted in their own greaſe. Think of that, a man of my kidney; think of that, that am as ſubject to heat as butter; a man of continual diſſolution and thaw; it was a miracle to 'ſcape ſuffocation. And in the height of this bath, when I was more than half ſtew'd in greaſe, like a Dutch diſh, to be thrown into the Thames, and cool'd glowing hot, in that ſurge, like a horſe-ſhoe; think of that; hiſſing hot; think of that, Mr Brook.

Merry Wives of Windſor, act 3. ſc. 17.

RITE, among divines, denotes the particular manner of celebrating divine ſervice in this or that country. Rite, || River.

RITORNELLO, or REPEAT, in muſic the burden of a ſong, or the repetition of the firſt or other verſes of a ſong at the end of each couplet.

RITTERHUSIUS (Conrad), a learned German civilian, born at Brunſwick in 1560. He was profeſſor of civil law at Altdorf, and publiſhed a variety of works, particularly as a civilian; together with an edition of Oppian in Greek and Latin: he was moreover an excellent critic; his notes upon many eminent authors having been inſerted in the beſt editions of them. He died in 1613.

RITUAL, a book directing the order and manner to be obſerved in performing divine ſervice in a particular church, dioceſe, or the like. The ancient heathens had alſo their rituals, which contained their rites and ceremonies to be obſerved in building a city, conſecrating a temple or altar, in ſacrificing, and deifying, in dividing the curiæ, tribes, centuries, and in general, in all their religious ceremonies. There are ſeveral paſſages in Cato's books, *De re Ruſtica*, which may give us ſome idea of the rituals of the ancients.

RIVAL, a term applied to two or more perſons who have the ſame pretenſions; and which is properly applied to a competitor in love, and figuratively to an antagoniſt in any other purſuit.

R I V E R,

1 Definition.

IS a current of freſh water, flowing in a BED or CHANNEL from its ſource to the ſea.

The term is appropriated to a *conſiderable* collection of waters, formed by the conflux of two or more BROOKS, which deliver into its channel the united ſtreams of ſeveral RIVULETS, which have collected the ſupplies of many RILLS trickling down from numberleſs ſprings, and the torrents which carry off from the ſloping grounds the ſurplus of every ſhower.

2 Utility of rivers.

Rivers form one of the chief features of the ſurface of this globe, ſerving as voiders of all that is immediately redundant in our rains and ſprings, and alſo as boundaries and barriers, and even as highways, and in many countries as plentiful ſtorehouſes. They alſo fertiliſe our ſoil by laying upon our warm fields the richeſt mould, brought from the high mountains, where it would have remained uſeleſs for want of genial heat.

3 Origin of their names.

Being ſuch intereſting objects of attention, every branch acquires a proper name, and the whole acquires a ſort of perſonal identity, of which it is frequently difficult to find the principle; for the name of the great body of waters which diſcharges itſelf into the ſea is traced backwards to one of the ſources, while all the contributing ſtreams are loſt, although their waters form the chief part of the collection. And ſometimes the feeder in which the name is preſerved is ſmaller than others which are united to the current, and which like a rich but ignoble alliance loſe their name in that of the more illuſtrious family. Some rivers indeed are reſpectable even at their birth, coming at once in force from ſome great lake. Such is the Rio de la Plata, the river St Laurence, and the mighty ſtreams which iſſue in all directions from the Baical lake. But, like the ſons of Adam, they are all of equal deſcent, and ſhould take their name from one the feeders of theſe lakes. This is indeed the caſe with a few, ſuch as the Rhone, the Rhine, the Nile. Theſe, after having mixed their waters with thoſe of the lake, reſume their appearance and their name at its outfet.

4 Origin and progreſs ſimilar to the life of man.

But in general their origin and progreſs, and even the features of their character, bear ſome reſemblance (as has been prettily obſerved by Pliny) to the life of man. The river ſprings from the earth; but its origin is in heaven. Its beginnings are inſignificant, and its infancy is frivolous; it plays among the flowers of a meadow; it waters a garden, or turns a little mill. Gathering ſtrength in its youth, it becomes wild and impetuous. Impatient of the reſtraints which it ſtill meets with in the hollows among the mountains, it is reſtleſs and fretful; quick in its turnings, and unſteady in its courſe. Now it is a roaring cataract, tearing up and overturning whatever oppoſes its progreſs, and it ſhoots headlong down from a rock; then it becomes a ſullen and gloomy pool, buried in the bottom of a glin. Recovering breath by repoſe, it again daſhes along, till tired of the uproar and miſchief, it quits all that it has ſwept along, and leaves the opening of the valley ſtrewed with the rejected waſte. Now, quitting its retirement, it comes abroad into the world, journeying with more prudence and diſcretion through cultivated fields, yielding to circumſtances, and winding round what would trouble it to overwhelm or remove. It paſſes through the populous cities and all the buſy haunts of man, tendering its ſervices on every ſide, and becomes the ſupport and ornament of the country. Now increaſed by numerous alliances, and advanced

in its courſe of exiſtence, it becomes grave and ſtately in its motions, loves peace and quiet; and in majeſtic ſilence rolls on its mighty waters, till it is loſt to ſight in the vaſt abyſs.

5 The religious reſpect for rivers.

The philoſopher, the real lover of wiſdom, ſees much to admire in the economy and mechaniſm of running waters; and there are few operations of nature which give him more opportunities of remarking the nice adjuſtment of the moſt ſimple means for attaining many purpoſes of moſt extenſive beneficence. All mankind ſeem to have felt this. The heart of man is ever open (unleſs perverted by the habits of ſelfiſh indulgence and arrogant ſelf-conceit) to impreſſions of gratitude and love. He who aſcribes the religious principle (debaſed, though it be by the humbling abuſes of ſuperſtition) to the workings of fear alone, may betray the ſlaviſh meanneſs of his own mind, but gives a very unfair and a falſe picture of the hearts of his neighbours. Lucretius was but half a philoſopher when he penned his often-quoted apophthegm. Indeed his invectives ſhow how much the animal was blended with the ſage.

6 The effect of gratitude and affection.

We apprehend, that whoever will read with an honeſt and candid mind, unbiaſſed by licentious wiſhes, the accounts of the ancient ſuperſtitions will acknowledge that the amiable emotions of the human ſoul have had their ſhare in creating the numerous divinities whoſe worſhip filled up their kalendars. The ſun and the heat of heaven have in all ages and nations been the objects of a ſincere worſhip. Next to them, the rivers ſeem to have attracted the grateful acknowledgments of the inhabitants of the adjacent countries. They have everywhere been conſidered as a ſort of tutelar divinities; and each little diſtrict, every retired valley, had its river god, who was preferred to all others with a partial fondneſs. The expoſtulation of Naaman the Syrian, who was offended with the prophet for enjoining him to waſh in the river Jordan, was the natural effuſion of this attachment. "What! (ſaid he), are not Abana and Parphar, rivers of Damaſcus, more excellent than all the waters of Judæa? Might I not waſh in them and be clean? So he went away wroth."

In thoſe countries particularly, where the rural labours, and the hopes of the ſhepherd and the huſbandman, were not ſo immediately connected with the approach and receſs of the ſun, and depended rather on what happened in a far diſtant country by the falls of periodical rains or the melting of collected ſnows, the Nile, the Ganges, the Indus, the river of Pegu, were the ſenſible agents of nature in procuring to the inhabitants of their fertile banks all their abundance, and they became the objects of grateful veneration. Their ſources were ſought out with anxious care even by conquering princes; and when found, were univerſally worſhipped with the moſt affectionate devotion. Theſe remarkable rivers, ſo eminently and ſo palpably beneficent, preſerve to this day, amidſt every change of habit, and every increaſe of civilization and improvement, the fond adoration of the inhabitants of thoſe fruitful countries through which they hold their ſtately courſe, and their waters are ſtill held ſacred. No progreſs of artificial refinement, not all the corruption of luxurious ſenſuality, has been able to eradicate this plant of native growth from the heart of man. The ſentiment is congenial to his nature, and therefore it is univerſal; and we could almoſt appeal to the feelings of every reader, whether he does not perceive it in his own breaſt. Perhaps we may be miſtaken in our opinion in the caſe of the corrupted inhabitants of the populous and buſy cities, who are habituated to the fond contemplation of their own individual exertions as the ſources of all their hopes. Give the ſhoemaker but leather and a few tools, and he defies the powers of nature to diſappoint him; but the ſimpler inhabitants of the country, the moſt worthy and the moſt reſpectable part of every nation, after equal, perhaps greater exertion both of ſkill and of induſtry, are more accuſtomed to reſign themſelves to the great miniſters of Providence, and to look up to heaven for the "early and the latter rains," without which all their labours are fruitleſs.

——extrema per illos
Nameaque exedens terris veſtigia fecit.

And among the huſbandmen and the ſhepherds of all nations and ages, we find the ſame fond attachment to their ſprings and rivulets.

Fortunate ſenex, hic inter flumina nota
Et fontes ſacros frigus captabis opacum,

was the mournful ejaculation of poor Melibæus. We hardly know a river of any note in our own country whoſe ſource is not looked on with ſome reſpect.

We repeat our aſſertion, that this worſhip was the offspring of affection and gratitude, and that it is giving a very unfair and falſe picture of the human mind to aſcribe theſe ſuperſtitions to the working of fear alone. Theſe would have repreſented the river-gods as ſeated on ruins, brandiſhing rooted-up trees, with angry looks, pouring out their ſweeping torrents. But no ſuch thing. The lively imagination of the Greeks felt, and expreſſed with an energy unknown to all other nations, every emotion of the human ſoul. They figured the Naiads as beautiful nymphs, patterns of gentleneſs and of elegance. They are repreſented as partially attached to the children of men; and their interference in human affairs is always in acts of kind aſſiſtance and protection. They reſemble, in this reſpect, the rural deities of the northern nations, the fairies, but without their caprices and reſentments. And, if we attend to the deſcriptions and repreſentations of their RIVER-GODS, beings armed with power, an attribute which ſlaviſh fear never fails to couple with cruelty and vengeance, we find the ſame expreſſion of affectionate truſt and confidence in their kind diſpoſitions. They are generally called by the reſpectable but endearing name of *father*. "*Da Tyberi patri*," ſays Virgil. Mr Bruce ſays that the Nile at its ſource is called the *abay* or "father."—We obſerve this word, or its radix, blended with many names of rivers of the eaſt; and think it probable that when our traveller got this name from the inhabitants of the neighbourhood, they applied to the ſtream what is meant to expreſs the tutelar or preſiding ſpirit. The river-gods are always repreſented as venerable old men, to indicate their being coeval with the world. But it is always a *cana vir liſque ſenectus*, and they are never repreſented as oppreſſed with age and decrepitude. Their beards are long and flowing, their looks placid, their attitude eaſy, reclined on a bank, covered, as they are crowned, with never-fading ſedges and bulruſhes, and leaning on their urns, from which they pour out their plentiful and fertilizing ſtreams.—

History. Mr Bruce's deſcription of the ſources of the Nile, and of the reſpect paid to the ſacred waters, has not a frowning feature; and the hoſpitable old man, with his fair daughter Irepone, and the gentle prieſthood which peopled the little village of Geſh, forms a contraſt with the neighbouring Galla (among whom a military leader was called the *lamb*, becauſe he did not murder pregnant women), which very diſtinctly paints the inſpiring principle of this ſuperſtition. Pliny ſays (VIII. 8.) that at the ſource of the Clitumnus there is an ancient temple highly reſpected. The preſence and the power of the divinity are expreſſed by the fates which ſtand in the veſtibule.—Around this temple are ſeveral little chapels, each of which covers a ſacred fountain; for the Clitumnus is the father of ſeveral little rivers which unite their ſtreams with him. At ſome diſtance below the temple is a bridge which divides the ſacred waters from thoſe which are open to common uſe. No one muſt preſume to ſet his foot in the ſtreams above this bridge; and to ſtep over any of them is an indignity which renders a perſon infamous. They can only be viſited in a conſecrated boat. Below the bridge we are permitted to bathe, and the place is inceſſantly occupied by the neighbouring villagers. (See alſo *Vibius Sequeſtr. Orbelini.* p. 101—103. and 221—223. alſo *Sueton. Caligula*, c. 43. *Virg. Georg. II.* 146.)

What is the cauſe of all this? The Clitumnus flows (near its ſource) through the richeſt paſtures, through which it was carefully diſtributed by numberleſs drains; and theſe nouriſhed cattle of ſuch ſpotleſs whiteneſs and extraordinary beauty, that they were ſought for with eagerneſs over all Italy, as the moſt acceptable victims in their ſacrifices. Is not this ſuperſtition then an effuſion of gratitude?

Such are the dictates of kind-hearted nature in our breaſts, before it has been vitiated by vanity and ſelf-conceit, and we ſhould not be aſhamed of feeling the impreſſion. We hardly think of making any apology for dwelling a little on this incidental circumſtance of the ſuperſtitious veneration paid to rivers. We cannot think that our readers will be diſpleaſed at having agreeable ideas excited in their minds, being always of opinion that the torch of true philoſophy will not only enlighten the underſtanding, but alſo warm and cheriſh the affections of the heart.

7 Origin of rivers. With reſpect to the origin of rivers, we have very little to offer in this place. It is obvious to every perſon, that beſides the torrents which carry down into the rivers what part of the rains and melted ſnows is not abſorbed by the ſoil or taken up by the plants which cover the earth, they are fed either immediately or remotely by the ſprings. A few remarkable ſtreams ruſh at once out of the earth in force, and muſt be conſidered as the continuation of ſubterraneous rivers, whoſe origin we are therefore to ſeek out; and we do not know any circumſtance in which their firſt beginnings differ from thoſe of other rivers, which are formed by the union of little ſtreams and rills, each of which has its own ſource in a ſpring or fountain. This queſtion, therefore, What is the proceſs of nature, and what are the ſupplies which fill our ſprings? will be treated of under the word SPRING.

Whatever be the ſource of rivers, it is to be met with in almoſt every part of the globe. The cruſt of earth with which the rocky framing of this globe is covered is generally ſtratified. Some of theſe ſtrata are extremely pervious to water, having but ſmall attraction for its particles, and being very porous. Such is the quality of gravelly ſtrata in an eminent degree. Other ſtrata are much more firm, or attract water more ſtrongly, and refuſe it a paſſage. This is the caſe with firm rock and with clay. When a ſtratum of the firſt kind has one of the other immediately under it, the water remains in the upper ſtratum, and burſts out wherever the ſloping ſides of the hills cut off the ſtrata, and this will be in the form of a trickling ſpring, becauſe the water in the porous ſtratum is greatly obſtructed in its paſſage towards the outlet. As this irregular formation of the earth is very general, we muſt have ſprings, and of courſe rivers or rivulets, in every corner where there are high grounds. History.

8 They flow from the higher to the lower grounds. Rivers flow from the higher to the lower grounds. It is the arrangement of this elevation which diſtributes them over the ſurface of the earth. And this appears to be accompliſhed with conſiderable regularity; and, except the great deſert of Kobi on the confines of Chineſe Tartary, we do not remember any very extenſive track of ground that is deprived of thoſe channels for voiding the ſuperfluous waters; and even there they are far from being redundant.

9 Courſe of the rivers of Europe. The courſe of rivers gives us the beſt general method for judging of the elevation of a country. Thus it appears that Savoy and Switzerland are the higheſt grounds of Europe, from whence the ground ſlopes in every direction. From the Alps proceed the Danube and the Rhine, whoſe courſes mark the two great valleys, into which many lateral ſtreams deſcend. The Po alſo and the Rhone come from the ſame head, and with a ſteeper and ſhorter courſe find their way to the ſea through valleys of leſs breadth and length. On the weſt ſide of the valleys of the Rhine and the Rhone the ground riſes pretty faſt, ſo that few tributary ſtreams come into them from that ſide; and from this gentle elevation France ſlopes to the weſtward. If a line, nearly ſtraight, but bending a little to the northward, be drawn from the head of Savoy and Switzerland all the way to Solikamſkoy in Siberia, it will nearly paſs through the moſt elevated part of Europe; for in this track moſt of the rivers have their riſe. On the left go off the various feeders of the Elbe, the Oder, the Weſel, the Niemen, the Duna, the Neva, the Dwina, the Petzora. On the right, after paſſing the feeders of the Danube, we ſee the ſources of the Sereth and Pruth, the Dnieſter, the Bog, the Dnieper, the Don, and the mighty Volga. The elevation, however, is extremely moderate; and it appears from the levels taken with the barometer by the Abbé Chappe d'Auteroche, that the head of the Volga is not more than 470 feet above the ſurface of the ocean. And we may obſerve here by the bye, that its mouth, where it diſcharges its waters into the Caſpian ſea, is undoubtedly lower, by many feet, than the ſurface of the ocean. See PNEUMATICS, n° 277. Spain and Finland, with Lapland, Norway, and Sweden, form two detached parts, which have little ſymmetry with the reſt of Europe.

10 Of Aſia. A chain of mountains begins in Nova Zembla, and ſtretches due ſouth to near the Caſpian Sea, dividing Europe from Aſia. About three or four degrees north

of

History. of the Caſpian ſea it bends to the ſouth-eaſt, traverſes Weſtern Tartary, and paſſing between the Tengis and Zaiſan lakes, it ſends branches to the eaſt and weſt. The eaſtern branch runs to the ſhores of Korea and Kamtſchatka. The weſtern branch traverſes Turkeſtan and Thibet, ſeparates Hindoſtan in India, and at the head of the Bay of Bengal joins an arm ſtretching from the great eaſtern branch, and here forms the centre of a very fine mountainous tract. Chains of mountains iſſue from it in every direction. The extremities of them keep very cloſe together, dividing the continent into narrow ſlips, which have each a great river flowing in the middle, and reaching to the extreme points of Malacca, Cambodia, and Cochin-china. From the ſame central point proceeds another great ridge due eaſt, and paſſes a little north of Canton in China. We called this a ſingular centre: for though it ſends off ſo many branches, it is by no means the moſt elevated part of the continent. In the triangle which is included between the firſt ſouthern ridge (which comes from between the lakes Tenges and Zaiſan), the great eaſtern ridge, and its branch which almoſt unites with the ſouthern ridge, lies the Boutan, and part of Thibet, and the many little rivers which occupy its ſurface, flow ſouthward and eaſtward, uniting a little to the north of the centre often mentioned, and then paſs through a gorge eaſtward into China. And it is farther to be obſerved, that theſe great ridges do not appear to be ſeated on the higheſt parts of the country; for the rivers which correſpond to them are at no great diſtance from them, and receive their chief ſupplies from the other ſides. This is remarkably the caſe with the great Oby, which runs almoſt parallel to the ridge from the lakes to Nova Zembla. It receives its ſupplies from the eaſt, and indeed it has its ſource far eaſt. The higheſt grounds (if we except the ridges of mountains which are boundaries) of the continent ſeem to be in the country of the Calmucs, about 95° eaſt from London, and latitude 43° or 45° north. It is repreſented as a fine though ſandy country, having many little rivers which loſe themſelves in the ſand, or end in little ſalt lakes. This elevation ſtretches north-eaſt to a great diſtance; and in this track we find the heads of the Irtiſh, Selenga, and Tunguſkaia (the great feeders of the Oby), the Olenitz, the Lena, the Yana, and ſome other rivers which all go off to the north. On the other ſide we have the great river Amur, and many ſmaller rivers, whoſe names are not familiar. The Hoangho, the great river of China, riſes on the ſouth ſide of the great eaſtern ridge we have ſo often mentioned. This elevation, which is a continuation of the former, is ſomewhat of the ſame complexion, being very ſandy, and at preſent is a deſert of prodigious extent. It is deſcribed, however, as interſperſed with vaſt tracks of rich paſture; and we know that it was formerly the reſidence of a great nation, who came ſouth by the name of *Turks*, and poſſeſſed themſelves of moſt of the richeſt kingdoms of Aſia. In the ſouth-weſtern extremity of this country are found remains not only of barbaric magnificence, but even of cultivation and elegance. It was a profitable privilege granted by Peter the Great to ſome adventurers to ſearch theſe ſandy deſerts for remains of former opulence, and many pieces of delicate workmanſhip (tho' not in a ſtyle which we would admire) in gold and ſilver were found. Vaults were found buried in the ſand filled with written papers, in a character wholly unknown; and a wall was diſcovered extending ſeveral miles, built with hewn ſtone and ornamented with corniches and battlements. But we are forgetting ourſelves, and return to the conſideration of the diſtribution of the rivers on the ſurface of the earth. A great ridge of mountains begins at the ſouth-eaſt corner of the Euxine Sea, and proceeds eaſtward, ranging along the ſouth ſide of the Caſpian, and ſtill advancing unites with the mountains firſt mentioned in Thibet, ſending off ſome branches to the ſouth, which divide Perſia, India, and Thibet. From the ſouth ſide of this ridge flow the Euphrates, Tigris, Indus, Ganges, &c. and from the north the ancient Oxus and many unknown ſtreams. History.

There is a remarkable circumſtance in this quarter of the globe. Although it ſeems to be neareſt to the greateſt elevations, it ſeems alſo to have places of the greateſt depreſſion. We have already ſaid that the Caſpian Sea is lower than the ocean. There is in its neighbourhood another great baſon of ſalt water, the lake Aral, which receives the waters of the Oxus or Gihon, which were ſaid to have formerly run into the Caſpian Sea. There cannot therefore be a great difference in the level of theſe two baſons; neither have they any outlet, tho' they receive great rivers. There is another great lake in the very middle of Perſia, the Zare or Zara, which receives the river Hindemend, of near 250 miles length, beſides other ſtreams. There is another ſuch in Aſia Minor. The ſea of Sodom and Gomorrah is another inſtance. And in the high countries we mentioned, there are many ſmall ſalt lakes, which receive little rivers, and have no outlet. The lake Zara in Perſia, however, is the only one which indicates a conſiderable hollow of the country. It is now aſcertained by actual ſurvey, that the ſea of Sodom is conſiderably higher than the Mediterranean. This feature is not, however, peculiar to Aſia. It obtains alſo in Africa, whoſe rivers we now proceed to mention.

11
Of Africa.

Of them, however, we know very little. The Nile indeed is perhaps better known than any river out of Europe; and of its ſource and progreſs we have given a full account in a ſeparate article. See NILE.

By the regiſter of the weather kept by Mr Bruce at Gondar in 1770 and 1771, it appears that the greateſt rains are about the beginning of July. He ſays that at an average each month after June it doubles its rains. The caliſh or canal is opened at Cairo about the 9th of Auguſt, when the river has riſen 14 peeks (each 21 inches), and the waters begin to decreaſe about the 10th of September. Hence we may form a conjecture concerning the time which the water employs in coming from Abyſſinia. Mr Bruce ſuppoſes it 9 days, which ſuppoſes a velocity not leſs than 14 feet in a ſecond; a thing paſt belief, and inconſiſtent with all our notions. The general ſlope of the river is greatly diminiſhed by ſeveral great cataracts; and Mr Bruce expreſsly ſays, that he might have come down from Sennaar to the cataracts of Syene in a boat, and that it is navigable for boats far above Sennaar. He came from Syene to Cairo by water. We apprehend that no boat would venture down a ſtream moving even ſix feet in a ſecond, and none could row up if the velocity was three feet. As the waters begin to decreaſe about the 10th of Sep-

History. September, we must conclude that the water then flowing past Cairo had left Abyssinia when the rains had greatly abated. Judging in this way, we must still allow the stream a velocity of more than six feet. Had the first swell at Cairo been noticed in 1770 or 1771, we might have guessed better. The year that Thevenot was in Egypt, the first swell of 8 peeks was observed Jan. 28. The calish was opened for 14 peeks on August 14th, and the waters began to decrease on September 23d, having risen to 21½ peeks. We may suppose a similar progress at Cairo corresponding to Mr Bruce's observations at Gondar, and date every thing five days earlier.

We understand that some of our gentlemen stationed far up the Ganges have had the curiosity to take notes of the swellings of that river, and compare them with the overflowings at Calcutta, and that their observations are about to be made public. Such accounts are valuable additions to our practical knowledge, and we shall not neglect to insert the information in some kindred article of this work.

The same mountains which attract the tropical vapours, and produce the fertilizing inundations of the Nile, perform the same office to the famous Niger, whose existence has often been accounted fabulous, and with whose course we have very little acquaintance. The researches of the gentlemen of the African association render its existence no longer doubtful, and have greatly excited the public curiosity. For a farther account of its track, see NIGER.

From the great number, and the very moderate size, of the rivers which fall into the Atlantic Ocean all the way south of the Gambia, we conclude that the western shore is the most elevated, and that the mountains are at no great distance inland. On the other hand, the rivers at Melinda and Sofala are of a magnitude which indicate a much longer course. But of all this we speak with much uncertainty.

12 And of America. The frame-work (so to call it) of America is better known, and is singular.

A chain of mountains begins, or at least is found, in longitude 110° west of London, and latitude 40° north, on the northern confines of the kingdom of Mexico, and stretching southward through that kingdom, forms the ridge of the neck of land which separates North from South America, and keeping almost close to the shore, ranges along the whole western coast of South America, terminating at Cape Horn. In its course it sends off branches, which after separating from it for a few leagues, rejoin it again, including valleys of great extent from north to south, and of prodigious elevation. In one of these, under the equatorial sun, stands the city of Quito, in the midst of extensive fields of barley, oats, wheat, and gardens, containing apples, pears, and gooseberries, and in short all the grains and fruits of the cooler parts of Europe; and although the vine is also there in perfection, the olive is wanting. Not a dozen miles from it in the low countries, the sugar-cane, the indigo, and all the fruits of the torrid zone, find their congenial heat, and the inhabitants swelter under a burning sun. At as small a distance on the other hand tower aloft the pinacles of Pichincha, Corambourou, and Chembaracaô, crowned with never melting snows.

The individual mountains of this stupendous range not only exceed in height all others in the world (if we except the peak of Teneriffe, Mount Ætna, and Mount Blanc); but they are set down on a base incomparably more elevated than any other country. They cut off therefore all communication between the Pacific Ocean and the inland continent; and no rivers are to be found on the west coast of South America which have any considerable length of course or body of waters. The country is drained, like Africa, in the opposite direction. Not 100 miles from the city of Lima, the capital of Peru, which lies almost on the sea shore, and just at the foot of the high Cordilleras, arises out of a small lake the Maragnon or Amazon's river, which, after running northward for about 100 miles, takes an easterly direction, and crosses nearly the broadest part of South America, and falls into the great western ocean at Para, after a course of not less than 3500 miles. In the first half of its descent it receives a few middle-sized rivers from the north, and from the south it receives the great river Combos, springing from another little lake not 50 miles distant from the head of the Maragnon, and inclosing between them a wide extent of country. Then it receives the Yuta, the Yuerva, the Cuchivara, and Parana Mire, each of which is equal to the Rhine; and then the Madeira, which has flowed above 1300 miles. At their junction the breadth is so great, that neither shore can be seen by a person standing up in a canoe; so that the united stream must be about 6 miles broad. In this majestic form it rolls along at a prodigious rate through a flat country, covered with impenetrable forests, and most of it as yet untrodden by human feet. Mr Condamine, who came down the stream, says, that all is silent as the desert, and the wild beasts and numberless birds crowd round the boat, eyeing it as some animal of which they did not seem afraid. The bed was cut deep through an equal and yielding soil, which seemed rich in every part, if he could judge by the vegetation, which was rank in the extreme. What an addition this to the possible population of this globe! A narrow slip along each bank of this mighty river would equal in surface the whole of Europe, and would probably exceed it in general fertility: and although the velocity in the main stream was great, he observed that it was extremely moderate, nay almost still, at the sides; so that in those parts where the country was inhabited by men, the Indians paddled up the river with perfect ease. Boats could go from Para to near the Mouth of the Madeira in 38 days, which is near 1200 miles.

Mr Condamine made an observation during his passage down the Maragnon, which is extremely curious and instructive, although it puzzled him very much. He observed that the tide was sensible at a vast distance from the mouth: It was very considerable at the junction of the Madeira; and he supposes that it might have been observed much farther up. This appeared to him very surprising, because there could be no doubt but that the surface of the water there was higher by a great many feet than the surface of the flood of the Atlantic ocean at the mouth of the river. It was therefore very natural for him to ascribe the tide in the Maragnon to the immediate action of the moon on its waters; and this explanation was the more reasonable, because the river extends in the direction of terrestrial longitude, which by the Newtonian theory is most favourable to the production of a tide. Journeying as he

did

History. did in an Indian canoe, we cannot ſuppoſe that he had much leiſure or convenience for obſervations, and therefore we are not ſurprized that he did not ſee that even this circumſtance was of little avail in ſo ſmall or ſhallow a body of water. He carefully noted, however, the times of high and low water as he paſſed along. When arrived at Para, he found not only that the high water was later and later as we are farther from the mouth, but he found that at one and the ſame inſtant there were ſeveral points of high water between Para and the confluence of the Madeira, with points of low water intervening. This concluſion was eaſily drawn from his own obſervations, although he could not ſee at one inſtant the high waters in different places. He had only to compute the time of high water at a particular ſpot, on the day he obſerved it at another; allowing, as uſual, for the moon's change of poſition. The reſult of his obſervations therefore was, that the ſurface of the river was not an inclined plane whoſe ſlope was leſſened by the tide of flood at the mouth of the river, but that it was a waving line, and that the propagation of the tide up the river was nothing different from the propagation of any other wave. We may conceive it clearly, though imperfectly, in this way. Let the place be noted where the tide happens 12 hours later than at the mouth of the river. It is evident that there is alſo a tide at the very mouth at the ſame inſtant; and, ſince the ocean tide had withdrawn itſelf during the time that the former tide had proceeded ſo far up the river, and the tide of ebb is ſucceſſively felt above as well as the tide of flood, there muſt be a low water between theſe two high waters.

Newton had pointed out this curious fact, and obſerved that the tide at London-Bridge, which is 43 feet above the ſea, is not the ſame with that at Graveſend, but the preceding tide (See *Phil. Tranſ.* 67.) This will be more particularly inſiſted on in another place.

Not far from the head of the Maragnon, the Cordilleras ſend off a branch to the north-eaſt, which reaches and ranges along the ſhore of the Mexican Gulf, and the Rio Grande de Sta Martha occupies the angle between the ridges.

Another ridge ranges with interruptions along the eaſt coaſt of Terra Firma, ſo that the whole waters of this country are collected into the Oroonoko. In like manner the north and eaſt of Braſil are hemmed in by mountainous ridges, through which there is no conſiderable paſſage; and the ground ſloping backwards, all the waters of this immenſe tract are collected from both ſides by many conſiderable rivers into the great river Paraguay, or Rio de la Plata, which runs down the middle of this country for more than 1400 miles, and falls into the ſea through a vaſt mouth in latitude 35°.

Thus the whole of South America ſeems as if it had been formerly ſurrounded by a mound, and been a great baſon. The ground in the middle, where the Parama, the Madeira, and the Plata, take their riſe, is an immenſe morraſs, uninhabitable for its exhalations, and quite impaſſable in its preſent ſtate.

The manner in which the continent of North America is watered, or rather drained, has alſo ſome peculiarities. By looking at the map, one will obſerve firſt of all a general diviſion of the whole of the known part into two, by the valleys in which the beds of the river St Laurence and Miſſiſippi are ſituated. The head of this is occupied by a ſingular ſeries of freſh water ſeas or lakes, viz. the lake Superior and Michigan, which empty themſelves into lake Huron by two cataracts. This again runs into lake Erie by the river Detroit, and the Erie pours its waters into the Ontario by the famous fall of Niagara, and from the Ontario proceeds the great river St Laurence. History.

The ground to the ſouth-weſt of the lakes Superior and Erie is ſomewhat lower, and the middle of the valley is occupied by the Miſſiſſippi and the Miſſouri, which receives on both ſides a number of ſmaller ſtreams, and having joined, proceed to the ſouth, under the name Miſſiſſippi. In latitude 37, this river receives into its bed the Ohio, a river of equal magnitude, and the Cherokee river, which drains all the country lying at the back of the United States, ſeparated from them by the ranges of the Apalachian mountains. The Miſſiſſippi is now one of the chief rivers on the globe, and proceeds due ſouth, till it falls into the Mexican bay through ſeveral ſhifting mouths, which greatly reſemble thoſe of the Danube and the Nile, having run above 1200 miles.

The elevated country between this bed of the Miſſiſſippi and St Laurence and the Atlantic ocean is drained on the eaſt ſide by a great number of rivers, ſome of which are very conſiderable, and of long courſe; becauſe inſtead of being nearly at right angles to the coaſt, as in other countries, they are in a great meaſure parallel to it. This is more remarkably the caſe with Hudſon's river, the Delaware, Patomack, Rapahanoc, &c. Indeed the whole of North America ſeems to conſiſt of ribs or beams laid nearly parallel to each other from north to ſouth, and the rivers occupy the interſtices. All thoſe which empty themſelves into the bay of Mexico are parallel and almoſt perfectly ſtraight, unlike what are ſeen in other parts of the world. The weſtermoſt of them all, the North River, as it is named by the Spaniards, as nearly as long is the Miſſiſſippi.

We are very little informed as yet of the diſtribution of rivers on the north-weſt coaſt of America, or the courſe of thoſe which run into Hudſon's and Baffin's bay.

13
Of the great rivers.

The Maragnon is undoubtedly the greateſt river in the world, both as to length of run and the vaſt body of water which it rolls along. The other great rivers ſucceed nearly in the following order.

Maragnon,	Amur,
Senegal,	Oroonoko,
Nile,	Ganges,
St Laurence,	Euphrates,
Hoangho,	Danube,
Rio de la Plata,	Don,
Yeniſey,	Indus,
Miſſiſſippi,	Dnieper,
Volga,	Duina,
Oby,	&c.

We have been much aſſiſted in this account of the courſe of rivers, and their diſtribution over the globe, by a beautiful planiſphere or map of the world publiſhed by Mr Bode aſtronomer royal at Berlin. The ranges of mountains are there laid down with philoſophical diſcernment and preciſion; and we recommend it to the notice

Theory. notice of our geographers. We cannot divine what has caused Mr Buffon to say that the course of most rivers is from east to west or from west to east. No physical point of his system seems to require it, and it needs only that we look at his own map to see its falsity. We should naturally expect to find the *general* course of rivers nearly perpendicular to the line of sea-coast; and we find it so; and the chief exceptions are in opposition to Mr Buffon's assertion. The structure of America is so particular, that *very few* of its rivers have their general course in this direction. We proceed now to consider the motion of rivers; a subject which naturally resolves itself into two parts, *theoretical* and *practical*. Theory.

Part I. THEORY of the MOTION of RIVERS and CANALS.

14 Importance of the doctrine of the motion of rivers and canals.

THE importance of this subject needs no commentary. Every nation, every country, every city, is interested in it. Neither our wants, our comforts, nor our pleasures, can dispense with an ignorance of it. We must conduct their waters to the centre of our dwellings; we must secure ourselves against their ravages; we must employ them to drive those machines which, by compensating for our personal weakness, make a few able to perform the work of thousands; we employ them to water and fertilize our fields, to decorate our mansions, to cleanse and embellish our cities, to preserve or extend our demesnes, to transport from county to county every thing which necessity, convenience, or luxury, has rendered precious to man: for these purposes we must confine and govern the mighty rivers, we must preserve or change the beds of the smaller streams, draw off from them what shall water our fields, drive our machines, or supply our houses. We must keep up their waters for the purposes of navigation, or supply their places by canals; we must drain our fens, and defend them when drained; we must understand their motions, and their mode of secret, slow, but unceasing action, that our bridges, our wharfs, our dikes, may not become heaps of ruins. Ignorant how to proceed in these daily recurring cases, how often do we see projects of high expectation and heavy expence fail of their object, leaving the state burdened with works not only useless but frequently hurtful?

This has long been a most interesting subject of study in Italy, where the fertility of their fields is not more indebted to their rich soil and happy climate, than to their numerous derivations from the rivers which traverse them: and in Holland and Flanders, where their very existence requires unceasing attention to the waters, which are every moment ready to swallow up the inhabitants; and where the inhabitants, having once subdued this formidable enemy, have made those very waters their indefatigable drudges, transporting through every corner of the country the materials of the most extensive commerce on the face of this globe.

Such having been our incessant occupations with moving waters, we should expect that while the operative artists are continually furnishing facts and experiments, the men of speculative and scientific curiosity, excited by the importance of the subject, would ere now have made considerable progress in the science; and that the professional engineer would be daily acting from established principle, and be seldom disappointed in his expectations. Unfortunately the reverse of this is nearly the true state of the case; each engineer is obliged to collect the greatest part of his knowledge from his own experience, and by many dear-bought lessons, to direct his future operations, in which he still proceeds with anxiety and hesitation: for we have not yet acquired principles of theory, and experiments have not yet been collected and published, by which an empirical practice might be safely formed. Many experiments of inestimable value are daily made; but they remain with their authors, who seldom have either leisure, ability, or generosity, to add them to the public stock.

15 This science as yet in its infancy.

The motion of waters has been really so little investigated as yet, that hydraulics may still be called a new study. We have merely skimmed over a few common notions concerning the motions of water; and the mathematicians of the first order seem to have contented themselves with such views as allowed them to entertain themselves with elegant applications of calculus. This, however, has not been their fault. They rarely had any opportunity of doing more, for want of a knowledge of facts. They have made excellent use of the few which have been given them; but it required much labour, great variety of opportunity, and great expence, to learn the multiplicity of things which are combined even in the simplest cases of water in motion. These are seldom the lot of the mathematician; and he is without blame when he enjoys the pleasures within his reach, and cultivates the science of geometry in its most abstracted form. Here he makes a progress which is the boast of human reason, being almost insured from error by the intellectual simplicity of his subject. But when we turn our attention to material objects, and without knowing either the size and shape of the elementary particles, or the laws which nature has prescribed for their action, presume to foresee their effects, calculate their exertions, direct their actions, what must be the consequence? Nature shows her independence with respect to our notions, and, always faithful to the laws which are enjoined, and of which we are ignorant, she never fails to thwart our views, to disconcert our projects, and render useless all our efforts.

16 Proper mode of investigation.

To wish to know the nature of the elements is vain, and our gross organs are insufficient for the study. To suppose what we do not know, and to fancy shapes and sizes at will; this is to raise phantoms, and will produce a system, but will not prove a foundation, for any science. But to interrogate Nature herself, study the laws which she so faithfully observes, catch her, as we say, in the fact, and thus wrest from her the secret; this is the only way to become her master, and it is the only procedure consistent with good sense. And we see, that soon after Kepler detected the laws of the planetary motions, when Galileo discovered the uniform acceleration of gravity, when Paschal discovered the pressure of the atmosphere, and Newton discovered the laws of attraction and the track of a ray of light; astronomy, mechanics, hydrostatics, chemistry, optics, quickly became

some bodies of found doctrine; and the deductions from thefe fpeculative theories were found fair repreſentations of the phenomena of nature. Whenever a man has diſcovered a law of nature, he has laid the foundation of a ſcience, and he has given us a new mean of ſubjecting to our ſervice ſome element hitherto indepen-dent: and ſo long as groups of natural operations follow a rule which appears to us mathematical, and will not admit our calculations, we may be aſſured that we are ignorant of the principle which connects them all, and regulates their procedure.

17 Our ignorance of the general laws of fluid motion.

This is remarkably the caſe with ſeveral phenomena in the motions of fluids, and particularly in the motion of water in a bed or conduit of any kind. Although the firſt geniuſes of Europe have for this century paſt turned much of their attention to this ſubject, we are almoſt ignorant of the *general laws* which may be obſerved in their motions. We have been able to ſelect very few points of reſemblance, and every caſe remains nearly an individual. About 150 years ago we diſcovered, by experience only, the quantity and velocity of water iſſuing from a ſmall orifice, and, after much labour, have extended this to any orifice; and this is almoſt the whole of our confidential knowledge. But as to the uniform courſe of the ſtreams which water the face of the earth, and the maxims which will certainly regulate this agreeably to our wiſhes, we are in a manner totally ignorant. Who can pretend to ſay what is the velocity of a river of which you tell him the breadth, the depth, and the declivity? Who can ſay what ſwell will be produced in different parts of its courſe, if a dam or weir of given dimenſions be made in it, or a bridge be thrown acroſs it? or how much its waters will be raiſed by turning another ſtream into it, or ſunk by taking off a branch to drive a mill? Who can ſay with confidence what muſt be the dimenſions or ſlope of this branch, in order to furniſh the water that is wanted, or the dimenſions and ſlope of a canal which ſhall effectually drain a fenny diſtrict? Who can ſay what form will cauſe or will prevent the undermining of banks, the forming of elbows, the pooling of the bed, or the depoſition of ſands? Yet theſe are the moſt important queſtions.

18 And the cauſes of it

The cauſes of this ignorance are the want or uncertainty of our principles; the falſity of our only theory, which is belied by experience; and the ſmall number of proper obſervations or experiments, and difficulty of making ſuch as ſhall be ſerviceable. We have, it is true, made a few experiments on the efflux of water from ſmall orifices, and from them we have deduced a ſort of theory, dependant on the fall of heavy bodies and the laws of hydroſtatic preſſure. Hydroſtatics is indeed founded on very ſimple principles, which give a very good account of the laws of the quieſcent equilibrium of fluids, in conſequence of gravity and perfect fluidity. But by what train of reaſoning can we connect theſe with the phenomena of the uniform motion of the waters of a river or open ſtream, which can derive its motion only from the ſlope of its ſurface, and the modifications of this motion or its velocity only from the width and depth of the ſtream? Theſe are the only circumſtances which can diſtinguiſh a portion of a river from a veſſel of the ſame ſize and ſhape, in which, however, the water is at reſt. In both, gravity is the ſole cauſe of preſſure and motion; but there muſt be ſome circumſtance peculiar to running waters which modifies the exertions of this active principle, and which, when diſcovered, muſt be the baſis of hydraulics, and muſt oblige us to reject every theory founded on fanciful hypotheſes, and which can only lead to abſurd concluſions: and ſurely abſurd conſequences, when legitimately drawn, are complete evidence of improper principles. Theory.

19 Principle on which the ſyſtems of hydraulics depend.

When it was diſcovered experimentally, that the velocities of water iſſuing from orifices at various depths under the ſurface were as the ſquare roots of thoſe depths, and the fact was verified by repeated experiments, this principle was immediately and without modification applied to every motion of water. Mariotte, Varignon, Guglielmini, made it the baſis of complete ſyſtems of hydraulics, which prevail to this day, after having received various amendments and modifications. The ſame reaſoning obtains through them all, though frequently obſcured by other circumſtances, which are more perſpicuouſly expreſſed by Guglielmini in his Fundamental Theorems.

Plate CCCCXXXIX.

He conſiders every point P (fig. 1.) in a maſs of fluid as an orifice in the ſide of a veſſel, and conceives the particle as having a tendency to move with the ſame velocity with which it would iſſue from the orifice. Therefore, if a vertical line APC be drawn thro' that point, and if this be made the axis of a parabolic ADE, of which A at the ſurface of the fluid is the vertex, and AB (four times the height through which a heavy body would fall in a ſecond) is the parameter, the velocity of this particle will be repreſented by the ordinate PD of this parabola; that is, PD is the ſpace which it would uniformly deſcribe in a ſecond.

20 Theory derived from it.

From this principle is derived the following theory of running waters.

Let DC (fig. 2.) be the horizontal bottom of a reſervoir, to which is joined a ſloping channel CK of uniform breadth, and let AB be the ſurface of the ſtanding water in the reſervoir. Suppoſe the vertical plane BC pierced with an infinity of holes, through each of which the water iſſues. The velocity of each filament will be that which is acquired by falling from the ſurface AB †. The filament C, iſſuing with this velocity, will then glide down the inclined plane like any other heavy body; and (by the common doctrine of the motion down an inclined plane) when it has arrived at F, it will have the ſame velocity which it would have acquired by falling through the height OF, the point O being in the horizontal plane AB produced. The ſame may be ſaid of its velocity when it arrives at H or K. The filament immediately above C will alſo iſſue with a velocity which is in the ſubduplicate ratio of its depth, and will then glide down above the firſt filament. The ſame may be affirmed of all the filaments; and of the ſuperficial filament, which will occupy the ſurface of the deſcending ſtream.

† See Guglielmini's Hydraulics, 21.

21 The conſequences drawn from this theory.

From this account of the geneſis of a running ſtream of water, we may fairly draw the following conſequences.

1. The velocity of any particle R, in any part of the ſtream, is that acquired by falling from the horizontal plane AN.

2. The velocity at the bottom of the ſtream is everywhere greater than anywhere above it, and is leaſt of all at the ſurface.

3. The velocity of the ſtream increaſes continually as the ſtream recedes from its ſource.

4. The

Theory. 4. The depths EF, GH, &c. in different parts of the ſtream, will be nearly in the inverſe ſubduplicate ratio of the depths under the ſurface AN: for ſince the ſame quantity of water is running through every ſection EF and GH, and the channel is ſuppoſed of uniform breadth, the depth of each ſection muſt be inverſely as the velocity of the water paſſing through it. This velocity is indeed different in different filaments of the ſection; but the mean velocity in each ſection is in the ſubduplicate ratio of the depth of the filament under the ſurface AB. Therefore the ſtream becomes more ſhallow as it recedes from the ſource; and in conſequence of this the difference between LH and MG continually diminiſhes, and the velocities at the bottom and ſurface of the ſtream continually approach to equality, and at a great diſtance from the ſource they differ inſenſibly.

5. If the breadth of the ſtream be contracted in any part, the depth of the running water will be increaſed in that part, becauſe the ſame quantity muſt ſtill paſs through; but the velocity at the bottom will remain the ſame, and that at the ſurface will be leſs than it was before; and the area of the ſection will be increaſed on the whole.

6. Should a ſluice be put acroſs the ſtream, dipping a little into the water, the water muſt immediately riſe on the upper ſide of the ſluice till it riſes above the level of the reſervoir, and the ſmalleſt immerſion of the ſluice will produce this effect. For by lowering the ſluice, the area of the ſection is diminiſhed, and the velocity cannot be increaſed till the water heap up to a greater height than the ſurface of the reſervoir, and this acquires a preſſure which will produce a greater velocity of efflux through the orifice left below the ſluice.

7. An additional quantity of water coming into this channel will increaſe the depth of the ſtream, and the quantity of water which it conveys; but it will not increaſe the velocity of the bottom filaments, unleſs it comes from a higher ſource.

22 Are all contrary to experience. All theſe conſequences are contrary to experience, and ſhow the imperfection, at leaſt, of the explanation.

The third conſequence is of all the moſt contrary to experience. If any one will but take the trouble of following a ſingle brook from its ſource to the ſea, he will find it moſt rapid in its beginnings among the mountains, gradually ſlackening its pace as it winds among the hills and gentler declivities, and at laſt creeping ſlowly along through the flat grounds, till it is checked and brought to reſt by the tides of the ocean.

Nor is the ſecond conſequence more agreeable to obſervation. It is univerſally found, that the velocity of the ſurface in the middle of the ſtream is the greateſt of all, and that it gradually diminiſhes from thence to the bottom and ſides.

And the firſt conſequence, if true, would render the running waters on the ſurface of this earth the inſtruments of immediate ruin and devaſtation. If the waters of our rivers, in the cultivated parts of a country, which are two, three, and four hundred feet lower than their ſources, run with the velocity due to that height, they would in a few minutes lay the earth bare to the very bones.

The velocities of our rivers, brooks, and rills, being ſo greatly inferior to what this theory aſſigns to them the other conſequences are equally contrary to experience. Theory. When a ſtream has its ſection diminiſhed by narrowing the channel, the current increaſes in depth, and this is always accompanied by an increaſe of velocity through the whole of the ſection, and moſt of all at the ſurface; and the area of the ſection does not increaſe, but diminiſhes, all the phenomena, thus contradicting in every circumſtance the deduction from the theory; and when the ſection has been diminiſhed by a ſluice let down into the ſtream, the water gradually heaps up on the upper ſide of the ſluice, and, by its preſſure, prodnces an acceleration of the ſtream below the ſluice, in the ſame way as if it were the beginning of a ſtream, as explained in the theory. The velocity now is compoſed of the velocity preſerved from the ſource and the velocity produced by this ſubordinate accumulation; and this accumulation and velocity continually increaſe, till they become ſuch that the whole ſupply is again diſcharged through this contracted ſection: any additional water not only increaſes the quantity carried along the ſtream, but alſo increaſes the velocity, and therefore the ſection does not increaſe in the proportion of the quantity.

23 The theory however, has been generally followed by the writers on the ſubject, It is ſurpriſing that a theory really founded on a conceit, and which in every the moſt familiar and obvious circumſtance is contradicted by facts, ſhould have met with ſo much attention. That Varignon ſhould immediately catch at this notion of Guglielmini, and make it the ſubject of many elaborate analytical memoirs, is not to be wondered at. This author only wanted *donner priſe au calcul;* and it was a uſual joke among the academicians of Paris, when any new theorem was invented, *donnons le à Varignon à generaliſer.* But his numerous theorems and corollaries were adopted by all, and ſtill make the ſubſtance of the preſent ſyſtems of hydraulics. Graveſande, Muſhenbroek, and all the elementary treatiſes of natural philoſophy, deliver no other doctrines; and Belidor, who has been conſidered as the firſt of all the ſcientific engineers, details the ſame theory in his great work the *Architecture Hydraulique.*

24 Though ſome of the more ingenious ſaw its defects, and attempted to ſupply them. Guglielmini was, however, not altogether the dupe of his own ingenuity. He was not only a pretty good mathematician, but an aſſiduous and ſagacious obſerver. He had applied his theory to ſome important caſes which occurred in the courſe of his profeſſion as inſpector of the rivers and canals in the Milaneſe, and to the courſe of the Danube; and could not but perceive that great corrections were neceſſary for making the theory quadrate in ſome tolerable manner with obſervation; and he immediately ſaw that the motion was greatly obſtructed by inequalities of the canal, which gave to the contiguous filaments of the ſtream tranſverſe motions, which thwarted and confuſed the regular progreſs of the reſt of the ſtream, and thus checked its general progreſs. Theſe obſtructions, he obſerved, were moſt effectual in the beginning of its courſe, while yet a ſmall rill, running among ſtones, and in a very unequal bed. The whole ſtream being ſmall, the inequalities bore a great proportion to it, and thus the general effect was great. He alſo ſaw that the ſame cauſes (theſe tranſverſe motions produced by the unequal bottom) chiefly affected the contiguous filaments, and were the reaſons why the velocity at the ſides and bottom was ſo much diminiſhed as to be leſs than the ſuperficial velocity, and that even this might come to be

Theory. diminiſhed by the ſame cauſe. For he obſerved, that the general ſtream of a river is frequently compoſed of a ſort of boiling or tumbling motion, by which maſſes of water are brought up to the ſurface and again deſcend. Every perſon muſt recollect ſuch appearances in the freſhes of a muddy river; and in this way Guglielmini was enabled to account in ſome meaſure for the diſagreement of his theory with obſervation.

Mariotte had obſerved the ſame obſtructions even in the ſmoothest glaſs pipes. Here it could not be aſcribed to the checks occaſioned by tranſverſe motions. He therefore aſcribed it to friction, which he ſuppoſed to diminiſh the motion of fluid bodies in the ſame manner as of ſolids: and he thence concludes, that the filaments which immediately rub on the ſides of the tube have their velocity gradually diminiſhed; and that the filaments immediately adjoining to theſe, being thus obliged to paſs over them or outſtrip them, rub upon them, and have their own velocity diminiſhed in like manner, but in a ſmaller degree; and that the ſucceeding filaments towards the axis of the tube ſuffer ſimilar but ſmaller diminutions. By this means the whole ſtream may come to have a ſmaller velocity; and at any rate the medium velocity by which the quantity diſcharged is determined, is ſmaller than it would have been independent of friction.

Guglielmini adopted this opinion of Mariotte, and in his next work on the Motion of Rivers, conſidered this as the *chief* cauſe of the retardation; and he added a third circumſtance, which he conſidered as of no leſs conſequence, the viſcidity or tenacity of water. He obſerves that ſyrup, oil, and other fluids, where this viſcidity is more remarkable, have their motions prodigiouſly retarded by it, and ſuppoſes that water differs from them only in the degree in which it poſſeſſes this quality: and he ſays, that by this means not only the particles which are moving more rapidly have their motions diminiſhed by thoſe in their neighbourhood which move ſlower, but that the filaments alſo which would have moved more ſlowly are accelerated by their more active neighbours; and that in this manner the ſuperficial and inferior velocities are brought nearer to an equality. But this will never account for the univerſal fact, that the ſuperficial particles are the ſwifteſt of all. The ſuperficial particles, ſays he, acquire by this means a greater velocity than the parabolic law allows them; the medium velocity is often in the middle of the depth; the numerous obſtacles, continually multiplied and repeated, cauſe the current to loſe the velocity acquired by the fall; the ſlope of the bottom then diminiſhes, and often becomes very ſmall, ſo that the force remaining is hardly able to overcome the obſtacles which are ſtill repeated, and the river is reduced almoſt to a ſtate of ſtagnation. He obſerves, that the Rheno, a river of the Milaneſe, has near its mouth a ſlope of no more than 50″, which he conſiders as quite inadequate to the taſk; and here he introduces another principle, which he conſiders as an eſſential part of the theory of open currents. This is, that there ariſes from the very depth of the ſtream a propelling force which reſtores a part of the loſt velocity. He offers nothing in proof of this principle, but uſes it to account for and explain the motion of waters in horizontal canals. The principle has been adopted by the numerous Italian writers on hydraulics, and, by various contrivances, interwoven with the parabolic theory, as it is called, of Guglielmini. Our reader Theory. may ſee it in various modifications in the *Idroſtatica e Idraulica* of P. Lecchi, and in the *Sperienze Idrauliche* of Micheletti. It is by no means diſtinct either in its origin or in the manner of its application to the explanation of phenomena, and ſeems only to ſerve for giving ſomething like conſiſtency to the vague and obſcure diſcuſſions which have been publiſhed on this ſubject in Italy. We have already remarked, that in that country the ſubject is particularly intereſting, and has been much commented upon. But the writers of England, France, and Germany, have not paid ſo much attention to it, and have more generally occupied themſelves with the motion of water in cloſe conduits, which ſeem to admit of a more preciſe application of mathematical reaſoning.

25 Sir Iſaac Newton's obſervations on this ſubject.

Some of thoſe have conſidered with more attention the effects of friction and viſcidity. Sir Iſaac Newton, with his uſual penetration, had ſeen diſtinctly the manner in which it behoved theſe circumſtances to operate. He had occaſion, in his reſearches into the mechaniſm of the celeſtial motions, to examine the famous hypotheſis of Deſcartes, that the planets were carried round the ſun by fluid vortices, and ſaw that there would be no end to uncertainty and diſpute till the *modus operandi* of the vortices was mechanically conſidered. He therefore employed himſelf in the inveſtigation of the manner in which the acknowledged powers of natural bodies, acting according to the received laws of mechanics, could produce and preſerve theſe vortices, and reſtore that motion which was expended in carrying the planets round the ſun. He therefore, in the ſecond book of the Principles of Natural Philoſophy, gives a ſeries of beautiful propoſitions, viz. 51, 52, &c. with their corollaries, ſhowing how the rotation of a cylinder or ſphere round its axis in the midſt of a fluid will excite a vortical motion in this fluid; and he aſcertains with mathematical preciſion the motion of every filament of this vortex.

He ſets out from the ſuppoſition that this motion is excited in the ſurrounding ſtratum of fluid in conſequence of a want of perfect lubricity, and aſſumes as an hypotheſis, that the initial reſiſtance (or diminution of the motion of the cylinder) which ariſes from this want of lubricity, is proportional to the velocity with which the ſurface of the cylinder is ſeparated from the contiguous ſurface of the ſurrounding fluid, and that the whole reſiſtance is proportional to the velocity with which the parts of the fluid are mutually ſeparated from each other. From this, and the equality of action and re-action, it evidently follows, that the velocity of any ſtratum of the vortex is the arithmetical medium between the velocities of the ſtrata immediately within and without it. For the intermediate ſtratum cannot be in equilibrio, unleſs it is as much preſſed forward by the ſuperior motion of the ſtratum within it, as it is kept back by the ſlower motion of the ſtratum without it.

This beautiful inveſtigation applies in the moſt perfect manner to every change produced in the motion of a fluid filament, in conſequence of the viſcidity and friction of the adjoining filaments; and a filament proceeding along a tube at ſome ſmall diſtance from the ſides has, in like manner, a velocity which is the medium between thoſe of the filaments immediately ſurrounding its

Theory. it. It is therefore a problem of no very difficult solution to assign the law by which the velocity will gradually diminish as the filament recedes from the axis of a cylindrical tube. It is somewhat surprising that so neat a problem has never occupied the attention of the mathematicians during the time that these subjects were so assiduously studied; but so it is, that nothing precise has been published on the subject. The only approach to a discussion of this kind, is a Memoire of Mr Pitot, read to the academy of Paris in 1726, where he considers the velocity of efflux through a pipe. He, by attending to the comparative superiority of the *quantity of motion* in large pipes, he affirms, that the total diminutions arising from friction will be *(cæteris paribus)* in the inverse ratio of the diameters. This was thankfully received by other writers, and is now a part of our hydraulic theories. It has not, however, been attended to by those who write on the motion of rivers, though it is evident that it is applicable to these with equal propriety; and had it been introduced, it would at once have solved all their difficulties, and particularly would have shown how an almost imperceptible declivity would produce the gentle motion of a great river, without having recourse to the unintelligible principle of Guglielmini.

Mr Couplet made some experiments on the motion of the water in the great main pipes of Versailles, in order to obtain some notions of the retardations occasioned by friction. They were found prodigious; but were so irregular, and unsusceptible of reduction to any general principle, (and the experiments were indeed so few that they were unfit for this reduction), that he could establish no theory.—What Mr Belidor established on them, and makes a sort of system to direct future engineers, is quite unworthy of attention.

Upon the whole, this branch of hydraulics, although of much greater practical importance than the conduct of water in pipes, has never yet obtained more than a vague, and, we may call it, slovenly attention from the mathematicians; and we ascribe it to their not having taken the pains to settle its first principles with the same precision as had been done in the other branch. They were, from the beginning, satisfied with a sort of applicability of mathematical principles, without ever making the application. Were it not that some would accuse us of national partiality, we would ascribe it to this, that Newton had not pointed out the way in this as in the other branch. For any intelligent reader of the performances on the motions of fluids in close vessels; will see that there has not a principle, nay hardly a step of investigation, been added to those which were used or pointed out by Sir Isaac Newton. He has nowhere touched this question, the motion of water in an open canal. In his theories of the tides, and of the propagation of waves, he had an excellent opportunity for giving at once the fundamental principles of motion in a free fluid whose surface was not horizontal. But, by means of some of those happy and shrewd guesses, in which, as Daniel Bernoulli says, he excelled all men, he saw the undoubted consequences of some palpable phenomenon which would answer all his present purposes, and therefore entered no farther into the investigation.

26 Scarce at all improved since his time.

The original theory of Guglielmini, or the principle adopted by him, that each particle of the vertical section of a running stream has a tendency to move as if it were issuing from an orifice at that depth under the surface, is false; and that it really does so in the face of a dam when the flood-gate is taken away, is no less so; and if it did, the subsequent motions would hardly have any resemblance to those which he assigns them. Were this the case, the exterior form of the cascade would be something like what is sketched in fig. 3. with an abrupt angle at B, and a concave surface BEG. This will be evident to every one who combines the greater velocity of the lower filaments with the slower motion of those which must slide down above them. But this greater advance of the lower filaments cannot take place without an expenditure of the water under the surface AB. The surface therefore sinks, and B instantly ceases to retain its place in the horizontal plane. The water does not successively flow forward from A to B, and then tumble over the precipice; but immediately upon opening the flood-gate, the water wastes from the space immediately behind it, and the whole puts on the form represented in fig. 4. consisting of the curve A *a* P *c* EG, convex from A to *c*, and concave from thence forward. The superficial water begins to accelerate all the way from A; and the particles may be supposed (for the present) to have acquired the velocity corresponding to their depth under the horizontal surface. This must be understood as nothing more than a vague sketch of the motions. It requires a very critical and intricate investigation to determine either the form of the upper curve or the motions of the different filaments. The place A, where the curvature begins, is of equally difficult determination, and is various according to the differences of depth and of inclination of the succeeding canal.

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27 Uncertainty of the theories when applied to practice exemplified.

We have given this sort of history of the progress which had been made in this part of hydraulics, that our readers might form some opinion of the many dissertations which have been written on the motion of rivers, and of the state of the arts depending on it. Much of the business of the civil engineer is intimately connected with it: and we may therefore believe, that since there was so little principle in the theories, there could be but very little certainty in the practical operations. The fact has been, that no engineer could pretend to say, with any precision, what would be the effect of his operations. One whose business had given him many opportunities, and who kept accurate and judicious registers of his own works, could pronounce, with some probability, how much water would be brought off by a drain of certain dimensions and a given slope, when the circumstances of the case happened to tally with some former work in which he had succeeded or failed; but out of the pale of his own experience he could only make a sagacious guess. A remarkable instance of this occurred not long ago. A small aqueduct was lately carried into Paris. It had been conducted on a plan presented to the academy, who had corrected it, and gave a report of what its performance would be. When executed in the most accurate manner, it was deficient in the proportion of five to nine. When the celebrated Desaguliers was employed by the city of Edinburgh to superintend the bringing in the water for the supply of the city, he gave a report on the plan which was to be followed. It was executed to his complete satisfaction; and the quantity of

water

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water delivered was about one fixth of the quantity which he promiſed, and about one-eleventh of the quantity which the no leſs celebrated M'Laurin calculated from the ſame plan.

28 Neceſſity of multiplying experiments.

Such being the ſtate of our theoretical knowledge (if it can be called by this name), naturaliſts began to be perſuaded that it was but loſing time to make any uſe of a theory to incongruous with obſervation, and that the only ſafe method of proceeding was to multiply experiments in every variety of circumſtances, and to make a ſeries of experiments in every important caſe, which ſhould comprehend all the practicable modifications of that caſe. Perhaps circumſtances of reſemblance might occur, which would enable us to connect many of them together, and at laſt diſcover the principles which occaſioned this connection; by which means a theory founded on ſcience might be obtained. And if this point ſhould not be gained, we might perhaps find a few general facts, which are modified in all theſe particular caſes, in ſuch a manner that we can ſtill trace the general facts, and ſee the part of the particular caſe which depends on it. This would be the acquiſition of what may be called an empirical theory, by which every phenomenon would be explained, in ſo far as the explanation of a phenomenon is nothing more than the pointing out the general fact or law under which it is comprehended; and this theory would anſwer every practical purpoſe, becauſe we ſhould confidently foreſee what conſequences would reſult from ſuch and ſuch premiſes; or if we ſhould fail even in this, we ſhould ſtill have a ſeries of experiments ſo comprehenſive, that we could tell what place in the ſeries would correſpond to any particular caſe which might be propoſed.

29 Labours of Michelotti and Boſſut in thisway,

There are two gentleman, whoſe labours in this reſpect deſerve very particular notice, profeſſor Michelotti at Turin, and Abbé Boſſut at Paris. The firſt made a prodigious number of experiments both on the motion of water through pipes and in open canals. They were performed at the expence of the ſovereign, and no expence was ſpared. A tower was built of the fineſt maſonry, to ſerve as a veſſel from which the water was to iſſue through holes of various ſizes, under preſſures from 5 to 22 feet. The water was received into baſons conſtructed of maſonry and nicely lined with ſtucco, from whence it was conveyed in canals of brickwork lined with ſtucco, and of various forms and declivities. The experiments on the expence of water through pipes are of all that have yet been made the moſt numerous and exact, and may be appealed to on every occaſion. Thoſe made in open canals are ſtill more numerous, and are no doubt equally accurate; but they have not been ſo contrived as to be ſo generally uſeful, being in general very unlike the important caſes which will occur in practice, and they ſeem to have been contrived chiefly with the view of eſtabliſhing or overturning certain points of hydraulic doctrine which were probably prevalent at the time among the practical hydraulicſts.

The experiments of Boſſut are alſo of both kinds; and though on a much ſmaller ſcale than thoſe of Michelotti, ſeem to deſerve equal confidence. As far as they follow the ſame track, they perfectly coincide in their reſults, which ſhould procure confidence in the other; and they are made in ſituations much more analogous to the uſual practical caſes. This makes then doubly valuable. They are to be found in his two volumes intitled *Hydrodynamique*. He has opened this path of procedure in a manner ſo new and ſo judicious, that he has in ſome meaſure the merit of ſuch as ſhall follow him in the ſame path.

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30 And the progreſſive experiments of De Buat.

This has been moſt candidly and liberally allowed him by the chevalier de Buat, who has taken up this matter where the Abbe Boſſut left it, and has proſecuted his experiments with great aſſiduity; and we muſt now add with ſingular ſucceſs. By a very judicious conſideration of the ſubject, he hit on a particular view of it, which ſaved him the trouble of a minute conſideration of the ſmall internal motions, and enabled him to proceed from a very general and evident propoſition, which may be received as the key to a complete ſyſtem of practical hydraulics. We ſhall follow this ingenious author in what we have farther to ſay on the ſubject; and we doubt not but that our readers will think we do a ſervice to the public by making theſe diſcuſſions of the chevalier de Buat more generally known in this country. It muſt not however be expected that we ſhall give more than a ſynoptical view of them, connected by ſuch familiar reaſoning as ſhall be either comprehended or confided in by perſons not deeply verſed in mathematical ſcience.

Sect. I. *Theory of Rivers.*

31 His leading propoſition.

It is certain that the motion of open ſtreams muſt, in ſome reſpects, reſemble that of bodies ſliding down inclined planes perfectly poliſhed; and that they would accelerate continually, were they not obſtructed: but they are obſtructed, and frequently move uniformly. This can only ariſe from an equilibrium between the forces which promote their deſcent and thoſe which oppoſe it. Mr Buat, therefore, aſſumes the leading propoſition, that

When water flows uniformly on any channel or bed, the accelerating force which obliges it to move is equal to the ſum of all the reſiſtances which it meets with, whether ariſing from its own viſcidity, or from the friction of its bed.

This law is as old as the formation of rivers, and ſhould be the key of hydraulic ſcience. Its evidence is clear; and it is, at any rate, the baſis of all uniform motion. And ſince it is ſo, there muſt be ſome conſiderable analogy between the motion in pipes and in open channels. Both owe their origin to an inequality of preſſure; both would accelerate continually, if nothing hindered; and both are reduced to uniformity by the viſcidity of the fluid and the friction of the channel.

32 The ſubject of the following diſcuſſion propoſed.

It will therefore be convenient to examine the phenomena of water moving in pipes by the action of its weight only along the ſloping channel. But previous to this, we muſt take ſome notice of the obſtruction to the entry of water into a channel of any kind, ariſing from the deflection of the many different filaments which preſs into the channel from the reſervoir from every ſide. Then we ſhall be able to ſeparate this diminution of motion from the ſum total that is obſerved, and aſcertain what part remains as produced by the ſubſequent obſtructions.

We then ſhall conſider the principle of uniform motion, the equilibrium between the power and the reſiſtance. The power is the relative height of the column of fluid which tends to move along the inclined plane of its bed; the reſiſtance is the friction

of

Theory. of the bed, the viſcidity of the fluid, and its adheſion to the ſides. Here are neceſſarily combined a number of circumſtances which muſt be gradually detached that we may ſee the effect of each, viz. the extent of the bed, its perimeter, and its ſlope. By examining the effects produced by variations of each of theſe ſeparately, we diſcover what ſhare each has in the general effect; and having thus analyſed the complicated phenomenon, we ſhall be able to combine thoſe its elements, and frame a formula which ſhall comprehend every circumſtance, from the greateſt velocity to the extinction of all motion, and from the extent of a river to the narrow dimenſions of a quill. We ſhall compare this formula with a ſeries of experiments in all this variety of circumſtances, partly made by Mr Buat, and partly collected from other authors; and we ſhall leave the reader to judge of the agreement.

Confident that this agreement will be found moſt ſatisfactory, we ſhall then proceed to conſider very curſorily the chief varieties which nature or art may introduce into theſe beds, the different velocities of the ſame ſtream, the intenſity of the reſiſtance produced by the inertia of the materials of the channel, and the force of the current by which it continually acts on this channel, tending to change either its dimenſions or its form. We ſhall endeavour to trace the origin of theſe great rivers which ſpread like the branches of a vigorous tree, and occupy the ſurface even of a vaſt continent. We ſhall follow them in their courſe, unfold all their windings, ſtudy their train, and regimen, and point out the law of its ſtability; and we ſhall inveſtigate the cauſes of their deviations and wanderings.

The ſtudy of theſe natural laws pleaſes the mind: but it anſwers a ſtill greater purpoſe; it enables us to aſſiſt nature, and to haſten her operations, which our wants and our impatience often find too ſlow. It enables us to command the elements, and to force them to adminiſter to our wants and our pleaſures.

We ſhall therefore, in the next place, apply the knowledge which we may acquire to the ſolution of the moſt important hydraulic queſtions which occur in the practice of the civil engineer.

We ſhall conſider the effects produced by a permanent addition to any river or ſtream by the union of another, and the oppoſite effect produced by any draught or offset, ſhowing the elevation or depreſſion produced up the ſtream, and the change made in the depth and velocity below the addition or offset.

We ſhall pay a ſimilar attention to the temporary ſwells produced by freſhes.

We ſhall aſcertain the effects of ſtraightening the courſe of a ſtream, which, by increaſing its ſlope, muſt increaſe its velocity, and therefore ſink the waters above the place where the curvature was removed, and diminiſh the tendency to overflow, while the ſame immediate conſequence muſt expoſe the places farther down to the riſk of floods from which they would otherwiſe have been free.

The effects of dams or weirs, and of bars, muſt then be conſidered; the gorge or ſwell which they produce up the ſtream muſt be determined for every diſtance from the weir or bar. This will furniſh us with rules for rendering navigable or floatable ſuch waters as have too little depth or too great ſlope. And it will appear that immenſe advantages may be thus derived, with a moderate expence, even from trifling brooks, if we will relinquiſh all prejudices, and not imagine that ſuch conveyance is impoſſible, becauſe it cannot be carried on by ſuch boats and ſmall craft as we have been accuſtomed to look at. Theory.

The effects of canals of derivation, the rules or maxims of draining, and the general maxims of embarkment, come in the next place; and our diſcuſſions will conclude with remarks on the moſt proper forms for the entry to canals, locks, docks, harbours, and mouths of rivers, the beſt ſhape for the ſtarlings of bridges and of boats for inland navigations, and ſuch like ſubordinate but intereſting particulars, which will be ſuggeſted by the general thread of diſcuſſion.

35 Natural velocity, expence and diſcharge through ſmall orifices.

It is conſidered, as phyſically demonſtrated (ſee HYDROSTATICS and HYDRAULICS), that water iſſuing from a ſmall orifice in the bottom or ſide of a very large veſſel, almoſt inſtantly acquires and maintains the velocity which a heavy body would acquire by falling to the orifice from the horizontal ſurface of the ſtagnant water. This we ſhall call its NATURAL VELOCITY. Therefore if we multiply the area of the orifice by this velocity, the product will be the bulk or quantity of the water which is diſcharged. This we may call the NATURAL EXPENCE of water, or the NATURAL DISCHARGE.

Let O repreſent the area or ſection of the orifice expreſſed in ſome known meaſure, and h its depth under the ſurface. Let g expreſs the velocity acquired by a heavy body during a ſecond by falling. Let V be the medium velocity of the water's motion, Q the quantity of water diſcharged during a ſecond, and N the natural expence.

We know that V is equal to $\sqrt{2g} \times \sqrt{h}$. Therefore $N = O.\sqrt{2g}.\sqrt{h}$.

If theſe dimenſions be all taken in Engliſh feet, we have $\sqrt{2g}$ very nearly equal to 8; and therefore $V = 8\sqrt{h}$, and $N = O.8\sqrt{h}$.

But in our preſent buſineſs it is much more convenient to meaſure every thing by inches. Therefore ſince a body acquires the velocity of 32 feet 2 inches in a ſecond, we have $2g = 64$ feet 4 inches or 772 inches, and $\sqrt{2g} = 27{,}78$ inches nearly $27\frac{3}{4}$ inches.

Therefore $V = \sqrt{772}\sqrt{h}, = 27{,}78\sqrt{h}$, and $N = O.\sqrt{772}\sqrt{h}, = O.27{,}78\sqrt{h}$.

But it is alſo well known, that if we were to calculate the expence or diſcharge for every orifice by this ſimple rule, we ſhould in every inſtance find it much greater than nature really gives us.

When water iſſues through a hole in a thin plate, the lateral columns, preſſing into the hole from all ſides, cauſe the iſſuing filaments to converge to the axis of the jet, and contract its dimenſions at a little diſtance from the hole. And it is in this place of greateſt contraction that the water acquires that velocity which we obſerve in our experiments, and which we aſſume as equal to that acquired by falling from the ſurface. Therefore, that our computed diſcharge may beſt agree with obſervation, it muſt be calculated on the ſuppoſition that the orifice is diminiſhed to the ſize of this ſmalleſt ſection. But the contraction is ſubject to variations, and the dimenſions of this ſmalleſt ſection are

Theory. are at all times difficult to ascertain with precision. It is therefore much more convenient to compute from the received dimensions of the orifice, and to correct this computed discharge, by means of an actual comparison of the computed and effective discharges in a series of experiments made in situations resembling those cases which most frequently occur in practice. This correction or its cause, in the mechanism of those internal motions, is generally called CONTRACTION by the writers on hydraulics; and it is not confined to a hole in a thin plate: it happens in some degree in all cases where fluids are made to pass through narrow places. It happens in the entry into all pipes, canals, and sluices; may even in the passage of water over the edge of a board, such as is usually set up on the head of a dam or weir, and even when this is immersed in water on both sides, as in a bar or keep, frequently employed for raising the waters of the level streams in Flanders, in order to render them navigable. We mentioned an observation § of Mr Buat to this effect, when he saw a gooseberry rise up from the bottom of the canal along the face of the bar, and then rapidly fly over its top. We have attempted to represent this motion of the filaments in these different situations.

34 Contraction.

§ See Resistance of Fluids, n° 60.

35 Motion of filaments in various particular situations,

Fig. 5. A shows the motion through a thin plate.

B shows the motion when a tube of about two diameters long is added, and when the water flows with a full mouth. This does not always happen in so short a pipe (and never in one that is shorter), but the water frequently detaches itself from the sides of the pipe, and flows with a contracted jet.

C shows the motion when the pipe projects into the inside of the vessel. In this case it is difficult to make it flow full.

D represents a mouth-piece fitted to the hole, and formed agreeably to that shape which a jet would assume of itself. In this case all contraction is avoided, because the mouth of this pipe may be considered as the real orifice, and nothing now diminishes the discharge but a trifling friction of the sides.

E shows the motion of water over a dam or weir, where the fall is free or unobstructed; the surface of the lower stream being lower than the edge or sole of the waste-board.

F is a similar representation of the motion of water over what we would call a *bar* or *keep*.

36 And the effects of contraction determined.

It was one great aim of the experiments of Michelotti and Bossut to determine the effects of contraction in these cases. Michelotti, after carefully observing the form and dimensions of the natural jet, made various mouth-pieces resembling it, till he obtained one which produced the smallest diminution of the computed discharge, or till the discharge computed for the area of its smaller end approached the nearest to the effective discharge. And he at last obtained one which gave a discharge of 983, when the natural discharge would have been a 1000. This piece was formed by the revolution of a trochoid round the axis of the jet, and the dimensions were as follow:

Diameter of the outer orifice	= 36
——— inner orifice	= 46
Length of the axis	= 96

The results of the experiments of the Abbé Bossut and of Michelotti scarcely differ, and they are expressed in the following table:

N. or the natural expence	1000	$=0.27{,}78\sqrt{h}$
Q for the thin plate fig. A almost at the surface	6526	$0.18{,}13\sqrt{h}$
Q for ditto at the depth of 8 feet	6195	$0.17{,}21\sqrt{h}$
Q for ditto at the depth of 16 feet	6173	$0.17{,}15\sqrt{h}$
Q for a tube 2 diameters long, fig. B.	8125	$0.22{,}57\sqrt{h}$
Q for ditto projecting inwards and flowing full	6814	$0.18{,}93\sqrt{h}$
Q for ditto with a contracted jet, fig. C.	5137	$0.14{,}27\sqrt{h}$
Q for the mouth-piece, fig. D.	9831	$0.27{,}31\sqrt{h}$
Q for a weir, fig. E.	9536	$0.26{,}49\sqrt{h}$
Q for a bar, fig. F.	9730	$0.27{,}03\sqrt{h}$

Theory.

The numbers in the last column of this little table are the cubical inches of water discharged in a second when the height h is one inch.

It must be observed that the discharges assigned here for the weir and bar relate only to the contractions occasioned by the passage over the edge of the board. The weir may also suffer a diminution by the contractions at its two ends, if it should be narrower than the stream, which is generally the case, because the two ends are commonly of square masonry or woodwork. The contraction there is nearly the same with that at the edge of a thin plate. But this could not be introduced into this table, because its effect on the expence is the same in quantity whatever is the length of the waste-board of the weir.

37 Diminution of discharge through a fluice, &c.

In like manner, the diminution of discharge through a fluice could not be expressed here. When a fluice is drawn up, but its lower edge still remains under water, the discharge is contracted both above and at the sides, and the diminution of discharge by each is in proportion to its extent. It is not easy to reduce either of these contractions to computation, but they may be very easily observed. We frequently can observe the water, at coming out of a fluice into a mill-course, quit the edge of the aperture, and show a part of the bottom quite dry. This is always the case when the velocity of efflux is considerable. When it is very moderate, this place is occupied by an eddy water almost stagnant. When the head of the water is 8 or 10 inches, and runs off freely, the space left between it and the sides is about $1\frac{1}{2}$ inches. If the sides of the entry have a slope, this void space can never appear; but there is always this tendency to convergence, which diminishes the quantity of the discharge.

It will frequently abridge computation very much to consider the water discharged in these different situations as moving with a common velocity, which we conceive as produced not by a fall from the surface of the fluid (which is exact only when the expence is equal to the natural expence), but by a fall h accommodated to the discharge: or it is convenient to know the height which would produce that very velocity which the water issues with in these situations.

And also, when the water is observed to be actually moving with a velocity V, and we know whether it is coming through a thin plate, through a tube, over a dam, &c. it is necessary to know the pressure or HEAD OF WATER h which has actually produced this velocity. It is convenient therefore to have the following numbers in readiness.

Theory.

h for the natural expence $= \frac{V^2}{772}$

h for a thin plate - $= \frac{V^2}{296}$

h for a tube 2 diam. long $= \frac{V^2}{505}$

h for a dam or weir - $= \frac{V^2}{726}$

h for a bar - $= \frac{V^2}{746}$

It was neceſſary to premiſe theſe FACTS in hydraulics, that we may be able in every caſe to diſtinguiſh between the force expended in the entry of the water into the conduit or canal, and the force employed in overcoming the reſiſtances along the canal, and in preſerving or accelerating its motion in it.

38 The motion of rivers depends on the ſlope of the ſurface.

The motion of running water is produced by two cauſes; 1. The action of gravity; and, 2. The mobility of the particles, which makes them aſſume a level in confined veſſels, or determines them to move to that ſide where there is a defect of preſſure. When the ſurface is level, every particle is at reſt, being equally preſſed in all directions; but if the ſurface is not level, not only does a particle on the very ſurface tend by its own weight towards the lower ſide, as a body would ſlide along an inclined plane, but there is a force, external to itſelf, ariſing from a ſuperiority of preſſure on the upper end of the ſurface, which puſhes this ſuperficial particle towards the lower end; and this is not peculiar to the ſuperficial particles, but affects every particle within the maſs of water. In the veſſel ACDE (fig. 6.), containing water with an inclined ſurface AE, if we ſuppoſe all frozen but the extreme columns AKHB, FGLE, and a connecting portion HKCDLG, it is evident, from hydroſtatical laws, that the water on this connecting part will be puſhed in the direction CD; and if the frozen maſs BHGF were moveable, it would alſo be puſhed along. Giving it fluidity will make no change in this reſpect; and it is indifferent what is the ſituation and ſhape of the connecting column or columns. The propelling force (MNF being horizontal) is the weight of the column AMNB. The ſame thing will obtain wherever we ſelect the vertical columns. There will always be a force tending to puſh every particle of water in the direction of the declivity. The conſequence will be, that the water will ſink at one end and riſe at the other, and its ſurface will reſt in the horizontal poſition aOe, cutting the former in its middle O. This cannot be unleſs there be not only a motion of perpendicular deſcent and aſcent of the vertical columns, but alſo a real motion of tranſlation from K towards L. It perhaps exceeds our mathematical ſkill to tell what will be the motion of each particle. Newton did not attempt it in his inveſtigation of the motion of waves, nor is it at all neceſſary here. We may, however, acquire a very diſtinct notion of its general effect. Let OPQ be a vertical plane paſſing through the middle point O. It is evident that every particle in PQ, ſuch as P, is preſſed in the direction Q D, with a force equal to the weight of a ſingle row of particles, whoſe length is the difference between the columns BH and FG. The force acting on the particle Q is, in like manner, the weight of a row of particles $=$ AC—ED. Now if OQ, OA, OE, be divided in the ſame ratio, ſo that all the figures ACDE, BHGF, &c. may be ſimilar, we ſee that the force ariſing ſolely from the declivity and acting on each particle on the plane OQ, is proportional to its depth under the ſurface, and that the row of particles ACQDE, BHPGF, &c. which is to be moved by it, is in the ſame proportion. Hence it unqueſtionably follows, that the accelerating force on each particle of the row is the ſame in all. Therefore the whole plane OQ tends to advance forward together with the ſame velocity; and in the inſtant immediately ſucceeding, all theſe particles would be found again in a vertical plain indefinitely near to OQ; and if we ſum up the forces, we ſhall find them the ſame as if OQ were the opening of a ſluice, having the water on the ſide of D ſtanding level with O, and the water on the other ſide ſtanding at the height AC. This reſult is extremely different from that of the haſty theory of Guglielmini. He conſiders each particle in OQ as urged by an accelerating force proportional to its depth, it is true; but he makes it *equal* to the weight of the row OP, and never recollects that the greateſt part of it is balanced by an oppoſite preſſure, nor perceives that the force which is not balanced muſt be diſtributed among a row of particles which varies in the ſame proportion with itſelf. When theſe two circumſtances are neglected, the reſult muſt be incompatible with obſervation. When the balanced forces are taken into the account of preſſure, it is evident that the ſurface may be ſuppoſed horizontal, and that motion ſhould obtain in this caſe as well as in the caſe of a ſloping ſurface: and indeed this is Guglielmini's profeſſed theory, and what he highly values himſelf on. He announces this diſcovery of a new principle, which he calls the energy of deep waters, as an important addition to hydraulics. It is owing to this, ſays he, that the great rivers are not ſtagnant at their mouths, where they have no perceptible declivity of ſurface, but, on the contrary, have greater energy and velocity than farther up, where they are ſhallower. This principle is the baſis of his improved theory of rivers, and is inſiſted on at great length by all the ſubſequent writers. Buffon, in his theory of the earth makes much uſe of it. We cannot but wonder that it has been allowed a place in the theory of rivers given in the great *Encyclopédie* of Paris, and in an article having the ſignature (O) of D'Alembert. We have been very anxious to ſhow the falſity of this principle, becauſe we conſider it as a mere ſubterfuge of Guglielmini, by which he was able to patch up the mathematical theory which he had ſo haſtily taken from Newton or Galileo; and we think that we have ſecured our readers from being miſled by it, when we ſhow that this energy muſt be equally operative when the ſurface is on a dead level. The abſurdity of this is evident. We ſhall ſee by and by, that deep waters, when in actual motion, have an energy not to be found in ſhallow running waters, by which they are enabled to continue that motion: but this is not a moving principle; and it will be fully explained, as an immediate reſult of principles, not vaguely conceived and indiſtinctly expreſſed, like this of Guglielmini, but eaſily underſtood, and appreciable with the greateſt preciſion. It is an energy common to all great bodies. Although they loſe as much momentum in ſurmounting any obſtacle as ſmall ones, they loſe but a ſmall portion of their velocity. At preſent, employed only in conſider-

Theory.

Theory. ing the progreſſive motion of an open ſtream, whoſe ſurface is not level, it is quite enough that we ſee that ſuch a motion muſt obtain, and that we ſee that there are propelling forces; and that theſe forces ariſe *ſolely* from the want of a level ſurface, or from the ſlope of the ſurface; and that; with reſpect to any one particle, the force acting on it is proportional to the difference of level between each of the two columns (one on each ſide of the particle) which produce it. Were the ſurface level, there would be no motion; if it is not level there will be motion; and this motion will be proportional to the want of level or the declivity of the ſurface: it is of no conſequence whether the bottom be level or not, or what is its ſhape.

Hence we draw a fundamental principle, that *the motion of rivers depends entirely on the ſlope of the ſurface.*

The SLOPE or declivity of any inclined plane is not properly expreſſed by the difference of height alone of its extremities; we muſt alſo conſider its length: and the meaſure of the ſlope muſt be ſuch that it may be the ſame while the declivity is the ſame. It muſt therefore be the ſame over the whole of any one inclined plane. We ſhall anſwer theſe conditions exactly, if we take for the meaſure of a ſlope the fraction which expreſſes the elevation of one extremity above the other divided by the length of the plane. Thus $\frac{AM}{AF}$ will expreſs the declivity of the plane AF.

39 When it is uniform the reſiſtance is equal to the accelerating force.

If the water met with no reſiſtance from the bed in which it runs, if it had no adheſion to its ſides and bottom, and if its fluidity were perfect, its gravity would accelerate its courſe continually, and the earth and its inhabitants would be deprived of all the advantages which they derive from its numberleſs ſtreams. They would run off ſo quickly, that our fields, dried up as ſoon as watered, would be barren and uſeleſs. No ſoil could reſiſt the impetuoſity of the torrents; and their accelerating force would render them a deſtroying ſcourge, were it not that, by kind Providence, the reſiſtance of the bed, and the viſcidity of the fluid, become a check which reins them in and ſets bounds to their rapidity. In this manner the friction on the ſides, which, by the viſcidity of the water, is communicated to the whole maſs, and the very adheſion of the particles to each other, and to the ſides of the channel, are the cauſes which make the reſiſtances bear a relation to the velocity; ſo that the reſiſtances augmenting with the velocities, come at laſt to balance the accelerating force. Then the velocity now acquired is preſerved, and the motion becomes uniform, without being able to acquire new increaſe, unleſs ſome change ſucceeds either in the ſlope or in the capacity of the channel. Hence ariſes the ſecond maxim in the motion of rivers. that *when a ſtream moves uniformly, the reſiſtance is equal to the accelerating force.*

As in the efflux of water through orifices, we paſs over the very beginning of the accelerated motion, which is a matter of ſpeculative curioſity, and conſider the motion in a ſtate of permanency, depending on the head of water, the area of the orifice, the velocity, and the expence; ſo, in the theory of the uniform motion of rivers, we conſider the ſlope, the tranſverſe ſection or area of the ſtream, the uniform velocity, and the expence. It will be convenient to affix preciſe meanings to the terms which we ſhall employ. Theory. 40 Terms precifely explained.

The SECTION of a ſtream is the area of a plane perpendicular to the direction of the general motion.

The reſiſtances ariſe ultimately from the action of the water on the internal ſurface of the channel, and muſt be proportional *(ceteris paribus)* to the extent of the action. Therefore if we unfold the whole edge of this ſection, which is rubbed as it were by the paſſing water, we ſhall have a meaſure of the extent of this action. In a pipe, circular or priſmatical, the whole circumference is acted on; but in a river or canal ACDQ (fig. 6.) the horizontal line *a* O *e*, which makes the upper boundary of the ſection *a* C D *e*, is free from all action. The action is confined to the three lines *a* C, C D, D *e*. We ſhall call this line *a* C D *e* the BORDER of the ſection.

The MEAN VELOCITY is that with which the whole ſection, moving equally, would generate a ſolid equal to the expence of the ſtream. This velocity is to be found perhaps but in one filament of the ſtream, and we do not know in which filament it is to be found

Since we are attempting to eſtabliſh an empirical theory of the motion of rivers, founded entirely on experiment and palpable deductions from them; and ſince it is extremely difficult to make experiments on open ſtreams which ſhall have a preciſion ſufficient for ſuch an important purpoſe—it would be a moſt deſirable thing to demonſtrate an exact analogy between the mutual balancing of the acceleration and reſiſtance in pipes and rivers; for in theſe we can not only make experiments with all the deſired accuracy, and admitting preciſe meaſures, but we can make them in a number of caſes that are almoſt impracticable in rivers. We can increaſe the ſlope of a pipe from nothing to the vertical poſition, and we can employ every deſired degree of preſſure ſo as to aſcertain its effect on the velocity in degrees which open ſtreams will not admit. The Chevalier de Buat has moſt happily ſucceeded in this demonſtration; and it is here that his good fortune and his penetration have done ſo much ſervice to practical ſcience.

41 The acceleration and reſiſtance of water in an horizontal tube,

Let AB (fig. 7.) be a horizontal tube, through which the water is impelled by the preſſure or HEAD DA. This head is the moving power; and it may be conceived as conſiſting of two parts, performing two diſtinct offices. One of them is employed in impreſſing on the water that velocity with which it *actually moves* in the tube. Were there no obſtructions to this motion, no greater head would be wanted; but there are obſtructions ariſing from friction, adheſion, and viſcidity. This requires force. Let this be the office of the reſt of the head of water in the reſervoir. There is but one allotment, appropriation, or repartition, of the whole head which will anſwer. Suppoſe E to be the point of partition, ſo that DE is the head neceſſary for impreſſing the actual velocity on the water (a head or preſſure which has a relation to the form or circumſtance of the entry, and the contraction which takes place there). The reſt EA is wholly employed in overcoming the ſimultaneous reſiſtances which take place along the whole tube AB, and is in equilibrio with this reſiſtance. Therefore if we apply at E a tube EC of the ſame length and diameter with AB, and

Theory. and having the ſame degree of poliſh or roughneſs; and if this tube be inclined in ſuch a manner that the axis of its extreimty may coincide with the axis of AB in the point C—we affirm that the velocity will be the ſame in both pipes, and that they will have the ſame expence; for the moving force in the floping pipe EC is compoſed of the whole weight of the column DE and the relative weight of the column EC; but this relative weight, by which alone it deſcends along the inclined pipe EC, is preciſely equal to the weight of a vertical column EA of the ſame diameter. Every thing therefore is equal in the two pipes, *viz.* the lengths, the diameters, the moving forces, and the reſiſtances; therefore the velocities and diſcharges will alſo be equal.

This is not only the caſe on the whole, but alſo in every part of it. The relative weight of any part of it EK is preciſely in equilibrio with the reſiſtances along that part of the pipe; for it has the ſame proportion to the whole relative weight that the reſiſtance has to the whole reſiſtance. Therefore *(and this is the moſt important circumſtance, and the baſis of the whole theory)* the pipe EC may be cut ſhorter, or may be lengthened to infinity, without making any change in the velocity or expence, ſo long as the propelling head DE remains the ſame.

Leaving the whole head DA as it is, if we lengthen the horizontal pipe AB to G, it is evident that we increaſe the reſiſtance without any addition of force to overcome it. The velocity muſt therefore be diminiſhed; and it will now be a velocity which is produced by a ſmaller head than DE: therefore if we were to put in a pipe of equal length at E, terminating in the horizontal line AG, the water will not run equally in both pipes. In order that it may, we muſt diſcover the diminiſhed velocity with which the water now actually runs along AG, and we muſt make a head DI capable of impreſſing this velocity at the entry of the pipe, and then inſert at I a pipe IH of the ſame length with AG. The expence and velocity of both pipes will now be the ſame (A).

42 Or in an inclined pipe. What has now been ſaid of a horizontal pipe AB would have been equally true of any inclined pipe AB, A′B (fig. 8.) Drawing the horizontal line CB, we ſee that DC is the whole head or propelling preſſure for either pipe AB or A′B; and if DE is the head neceſſary for the actual velocity, EC is the head neceſſary for balancing the reſiſtances; and the pipe EF of the ſame length with AB, and terminating in the ſame horizontal line, will have the ſome velocity; and its inclination being thus determined, it will have the ſame velocity and expence whatever be its length. Theory.

43 Analogy between theſe pipes and rivers demonſtrated by De Buat. Thus we ſee that the motion in any pipe, horizontal or floping, may be referred to or ſubſtituted for the motion in another inclined pipe, whoſe head of water, above the place of entry, is that productive of the actual velocity of the water in the pipe. Now, in this caſe, the accelerating force is equal to the reſiſtance: we may therefore conſider this laſt pipe as a river, of which the bed and the ſlope are uniform or conſtant, and the current in a ſtate of permanency; and we now may clearly draw this important concluſion, that pipes and open ſtreams, when in a ſtate of permanency, perfectly reſemble each other in the circumſtances which are the immediate cauſes of this permanency. The equilibrium between the accelerating force obtains not only in general, but takes place through the whole length of the pipe or ſtream, and is predicable of every individual tranſverſe ſection of either. To make this more palpably evident if poſſible, let us conſider a floping cylindrical pipe, the current of which is in a ſtate of permanency. We can conceive it as conſiſting of two half cylinders, an upper and a lower. Theſe are running together at an equal pace; and the filaments of each immediately contiguous to the ſeparating plane and to each other, are not rubbing on each other, nor affecting each other's motions in the ſmalleſt degree. It is true that the upper half is preſſing on the lower, but in a direction perpendicular to the motion, and therefore not affecting the velocity; and we ſhall ſee preſently, that although the lower ſide of the pipe bears ſomewhat more preſſure than the other, the reſiſtances are not changed. (Indeed this odds of preſſure is accompanied with a difference of motion, which need not be conſidered at preſent; and we may ſuppoſe the pipe ſo ſmall or ſo far below the ſurface, that this ſhall be inſenſible). Now let us ſuppoſe, that in an inſtant the upper half cylinder is annihilated: We then have an open ſtream; and every circumſtance of accelerating force and of reſiſtance remains preciſely as it was. The motion muſt therefore continue as it did; and in this ſtate the only accelerating force is the ſlope of the ſurface. The demonſtration therefore is complete.

44 Conſequence. From theſe obſervations and reaſonings we draw a general and important concluſion, "That the ſame pipe will be ſuſceptible of different velocities, which it will preſerve uniform to any diſtance, according as it has different inclinations; and each inclination of a pipe of given diameter has a certain velocity peculiar to itſelf, which will be maintained uniform to any diſtance

(A) We recommend it to the reader to make this diſtribution or allotment of the different portions of the preſſure very familiar to his mind. It is of the moſt extenſive influence in every queſtion of hydraulics, and will on every occaſion give him diſtinct conceptions of the internal procedure. Obvious as the thought ſeems to be, it has eſcaped the attention of all the writers, on the ſubject. Lecchi, in his *Hydraulics* publiſhed in 1766, aſcribes ſomething like it to Daniel Bernoulli; but Bernoulli, in the paſſage quoted, only ſpeaks of the partition of preſſure in the inſtant of opening an orifice. Part of it, ſays he, is employed in accelerating the quieſcent water, and producing the velocity of efflux, and the remainder produces the preſſure (now diminiſhed) on the ſides of the veſſel. Bernoulli, Boſſut, and all the good writers, make this diſtribution in expreſs terms in their explanation of the motion of water through ſucceſſive orifices; and it is ſurpriſing that no one before the Chevalier de Buat ſaw that the reſiſtance ariſing from friction required a ſimilar partition of the preſſure; but though we ſhould call this good fortune, we muſt aſcribe to his great ſagacity and juſtneſs of conception the beautiful uſe that he has made of it: "*ſuum cuique.*"

[illegible] continually, according [illegible] by theory or experiment, as the position of the pipe changes, from being [illegible] till it becomes vertical: in which position it has the greatest uniform velocity possible relative to its [illegible] inclination [illegible].

Let the [illegible] the [illegible], or the RATE of each pipe.

45 Measure of the resistance to the motion with a given velocity.

It [illegible] the principle [illegible] the utmost consequence [illegible] for by experiment we [illegible] the train of any pipe. It is in train when an [illegible] length makes no change in the velocity. If [illegible] the pipe increases the velocity, the [illegible] the pipe is too great, and [illegible]. And having discovered the train of the pipe, and observed its velocity, and computed the head productive of this velocity with the contraction at the entry, the remainder of the head, that is, the slope (for this is equivalent to [illegible]), is the measure of the resistance. Thus we obtain the measure of the resistance to the motion with a given velocity in a pipe of given diameter. If we change only the velocity, we get the measure of the new resistance relative to the velocity; and thus discover the law of relation between the resistance and velocity. Then changing only the diameter of the pipe, we get the measure of the resistance relative to the diameter. This is the aim of a prodigious number of experiments made and collected by Buat, and which we [illegible] repeat, but only give the results of the different parts of his investigation.

46 Results of [illegible] investigation on this [illegible].

We may express the slope of a pipe by the symbol $\frac{1}{s}$, 1 being an inch for instance, and s being the slant length of a pipe which is one inch more elevated at one end than at the other. Thus a river which has a declivity of an inch and a half in 120 fathoms or 8640 inches, has its slope $= \frac{1\frac{1}{2}}{8640}$, or $\frac{1}{5760}$. But in order to obtain the hydraulic slope of a conduit pipe, the heights of the reservoir and place of discharge being given, we must subtract from the difference of elevation the height or head of water necessary for propelling the water into any pipe with the velocity V, which it is supposed actually to have. This is $\frac{V^2}{505}$. The remainder is to be considered as the height of the declivity, which is to be distributed equally over the whole length of the pipe, and the slope is then $\frac{d}{l}, = \frac{1}{s}$.

There is another important view to be taken of the slope, which the reader should make very familiar to his thoughts. It expresses the proportion between the weight of the whole column which is in motion and the weight which is employed in overcoming the resistance; and the resistance to the motion of any column of water is equal to the weight of that column multiplied by the fraction $\frac{1}{s}$, which expresses its slope.

47 Of the resistances which bring the motions to a state of uniformity.

We come now to consider more particularly the resistances which in this manner bring the motions to a state of uniformity. If we consider the resistances which arise from a cause analogous to friction, we see that they must depend entirely on the inertia of the water. What we call the resistance is the diminution of a motion which *would* have obtained but for these resistances; and the best way we have of measuring them is by the force which we must employ in order to keep up or restore this motion. We estimate this motion by a progressive velocity, which we measure by the expence of water in a given time. We judge the velocity to diminish, when the quantity discharged diminishes; yet it may be otherwise, and probably is otherwise. The absolute velocity of many, if not all, of the particles, may even be increased; but many of the motions, being transverse to the general direction, the quantity of motion in this direction may be less, while the sum of the absolute motions of all the particles may be greater. When we increase the general velocity, it is not unreasonable to suppose that the impulses on all the inequalities are increased in this proportion; and the number of particles thus impelling and deflected at the same time will increase in the same proportion. The whole quantity therefore of these useless and lost motions will increase in the duplicate ratio of the velocities, and the force necessary for keeping up the motion will do so also; that is, the resistances should increase as the squares of the velocities.

Or if we consider the resistances as arising merely from the curvature of the imperceptible internal motions occasioned by the inequalities of the sides of the pipe, and as measured by the forces necessary for producing these curvilineal motions; then, because the curves will be the same whatever are the velocities, the deflecting forces will be as the squares of the velocities; but these deflecting forces are pressures, propagated from the parts urged or pressed by the external force, and are proportional to these external pressures by the principles of hydrostatics. Therefore the pressures or forces necessary for keeping up the velocities are as the squares of these velocities; and they are our only measures of the resistances which must be considered as following the same ratio. Whatever view therefore we take of the nature of these resistances, we are led to consider them as proportional to the squares of the velocities.

We may therefore express the resistances by the symbol $\frac{V^2}{m}$, m being some number to be discovered by experiment. Thus, in a particular pipe, the diminution of the motion or the resistance may be the 1000th part of the square of the velocity, and $R = \frac{V^2}{1000}$.

Now if g be the accelerating power of gravity on any particle, $\frac{g}{s}$ will be its accelerating power, by which it would urge it down the pipe whose slope is $\frac{1}{s}$. Therefore, by the principle of uniform motion, the equality of the accelerating force, and the resistance, we shall have $\frac{V^2}{m} = \frac{g}{s}$, and $V\sqrt{s} = \sqrt{mg}$; that is, the product of the velocity, and the reciprocal of the square root of the slope, or the quotient of the velocity divided by the slope, is a constant quantity $\sqrt{mg}$ for any given pipe; and the primary formula for all the uniform velocities of one pipe is $V = \frac{\sqrt{mg}}{\sqrt{s}}$.

Mr

Theory.

48
Experiments and reasoning of De Buat respecting these resistances, &c.

Mr Buat therefore examined this by experiment, but found, that even with respect to a pipe or channel which was uniform throughout, this was not true. We could give at once the final formula which he found to express the velocity in every case whatever; but this would be too empirical. The chief steps of his very sagacious investigation are instructive. We shall therefore mention them briefly, at least as far as they tend to give us any collateral information; and let it always be noted, that the instruction which they convey is not abstract speculation, but experimental truths, which must ever remain as an addition to our stock of knowledge, although Mr Buat's deductions from them should prove false.

He found, in the first place, that in the same channel the product of V and $\sqrt{s}$ increased as $\sqrt{s}$ increased; that is, the velocities increased faster than the square roots of the slope, or the resistances did not increase as fast as the squares of the velocities. We beg leave to refer our readers to what we said on the resistance of pipes to the motion of fluids through them, in the article PNEUMATICS, when speaking of bellows. They will there see very valid reasons (we apprehend) for thinking that the resistances must increase more slowly than the squares of the velocities.

It being found, then that V $\sqrt{s}$ is not equal to a constant quantity $\sqrt{mg}$, it becomes necessary to investigate some quantity depending on $\sqrt{s}$, or, as it is called, some function of $\sqrt{s}$, which shall render $\sqrt{mg}$ a constant quantity. Let X be this function of $\sqrt{s}$, so that we shall always have VX equal to the constant quantity $\sqrt{mg}$, or $\frac{\sqrt{mg}}{X}$ equal to the actual velocity V of a pipe or channel which is in train.

Mr Buat, after many trials and reflections, the chief of which will be mentioned by and by, found a value of X which corresponded with a vast variety of slopes and velocities, from motions almost imperceptible, in a bed nearly horizontal, to the greatest velocities which could be produced by gravity alone in a vertical pipe; and when he compared them together, he found a very discernible relation between the resistances and the magnitude of the section: that is, that in two channels which had the same slope, and the same propelling force, the velocity was greatest in the channel which had the greatest section relative to its border. This may reasonably be expected. The resistances arise from the mutual action of the water and this border. The water immediately contiguous to it is retarded, and this retards the next, and so on. It is to be expected, therefore, that if the border, and the velocity, and the slope, be the same, the diminution of this velocity will be so much the less as it is to be shared among a greater number of particles; that is, as the area of the section is greater in proportion to the extent of its border. The diminution of the general or medium velocity must be less in a cylindrical pipe than in a square one of the same area, because the border of its section is less.

It appears evident, that the resistance of each particle is in the direct proportion of the whole resistance, and the inverse proportion of the number of particles which receive equal shares of it. It is therefore directly as the border, and inversely as the section. Therefore in the expression $\frac{V^2}{m}$ which we have given for the resistance, the quantity m cannot be constant, except in the same channel; and in different channels it must vary along with the relation of the section to its border, because the resistances diminish in proportion as this relation increases.

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Without attempting to discover this relation by theoretical examination of the particular motions of the various filaments, Mr Buat endeavoured to discover it by a comparison of experiments. But this required some manner of stating this proportion between the augmentation of the section and the augmentation of its border.

His statement is this: He reduces every section to a rectangular parallelogram of the same area, and having its base equal to the border unfolded into a straight line. The product of this base by the height of the rectangle will be equal to the area of the section. Therefore this height will be a representative of this variable ratio of the section to its border. (We do not mean that there is any ratio between a surface and a line: but the ratio of section to section is different from that of border to border; and it is the ratio of these ratios which is thus expressed by the height of this rectangle). If S be the section, and B the border, $\frac{S}{B}$ is evidently a line equal to the height of this rectangle. Every section being in this manner reduced to a rectangle, the perpendicular height of it may be called the HYDRAULIC MEAN DEPTH of the section, and may be expressed by the symbol d. (Buat calls it the mean radius). If the channel be a cylindrical pipe, or an open half cylinder, it is evident that d is half the radius. If the section is a rectangle, whose width is w, and height h, the mean depth is $\frac{wh}{b+2h}$, &c. In general, if q represent the proportion of the breadth of a rectangular canal to its depth, that is, if q be made $=\frac{w}{h}$, we shall have $d=\frac{w}{q+2}$, or $d=\frac{qh}{q+2}$.

Now, since the resistances must augment as the proportion of the border to the section augments, m in the formulas $\frac{V^2}{m}=\frac{g}{s}$ and $V\sqrt{s}=\sqrt{mg}$, must follow the proportions of d, and the quantity $\sqrt{mg}$ must be proportional to $\sqrt{d}$ for different channels, and $\frac{\sqrt{mg}}{\sqrt{d}}$ should be a constant quantity in every case.

49
A specious objection.

Our author was aware, however, of a very specious objection to the close dependence of the resistance on the extent of the border; and that it might be said that a double border did not occasion a double resistance, unless the pressure on all the parts was the same. For it may be naturally (and it is generally) supposed, that the resistance will be greater when the pressure is greater. The friction or resistance analogous to friction may therefore be greater on an inch of the bottom than on an inch of the sides; but Mr D'Alembert and many others have demonstrated, that the paths of the filaments will be the same whatever be the pressures.

This

Theory.

This might ſerve to juſtify our ingenious author; but he was determined to reſt every thing on experiment. He therefore made an experiment on the oſcillation of water in ſyphons, which we have repeated in the following form, which is affected by the ſame circumſtances, and is ſuſceptible of much greater preciſion, and of more extenſive and important application.

50 Obviated by an experiment on the oſcillation of water in ſyphons.

The two veſſels ABCD, *a b c d* (fig. 9.) were connected by the ſyphon EFG *g f e*, which turned round in the thick tubes E and *e*, without allowing any water to eſcape; the axes of theſe tubes being in one ſtraight line. The veſſels were about 10 inches deep, and the branches FG, *f g* of the ſyphon were about five feet long. The veſſels were ſet on two tables of equal height, and (the hole *e* being ſtopped) the veſſel ABCD, and the whole ſyphon, were filled with water, and water was poured into the veſſel *a b c d* till it ſtood at a certain height LM. The ſyphon was then turned into a horizontal poſition, and the plug drawn out of *e*, and the time carefully noted which the water employed in riſing to the level HK *k h* in both veſſels. The whole apparatus was now inclined, ſo that the water run back into ABCD. The ſyphon was now put in a vertical poſition, and the experiment was repeated. —No ſenſible or regular difference was obſerved in the time. Yet in this experiment the preſſure on the part G *g* of the ſyphon was more than ſix times greater than before. As it was thought that the friction on this ſmall part (only ſix inches) was too ſmall a portion of the whole obſtruction, various additional obſtructions were put into this part of the ſyphon, and it was even lengthened to nine feet; but ſtill no remarkable difference was obſerved. It was even thought that the times were leſs when the ſyphon was vertical.

51 The reſiſtance depends chiefly on the relation between the ſection and its border.

Thus Mr De Buat's opinion is completely juſtified; and he may be allowed to aſſert, that the reſiſtance depends chiefly on the relation between the ſection and its border and that $\frac{\sqrt{mg}}{\sqrt{d}}$ ſhould be a conſtant quantity.

To aſcertain this point was the object of the next ſeries of experiments; to ſee whether this quantity was really conſtant, and, if not, to diſcover the law of its variation, and the phyſical circumſtances which accompanied the variations, and may therefore be conſidered as their cauſes. A careful compariſon of a very great number of experiments, made with the ſame ſlope, and with very different channels and velocities, ſhowed that $\sqrt{m g}$ did not follow the proportion of $\sqrt{d}$, nor of any power of $\sqrt{d}$. This quantity $\sqrt{m g}$ increaſed by ſmaller degrees in proportion as $\sqrt{d}$ was greater. In very great beds $\sqrt{m g}$ was nearly proportional to $\sqrt{d}$, but in ſmaller channels, the velocities diminiſhed much more than $\sqrt{d}$ did. Caſting about for ſome way of accommodation, Mr Buat conſidered, that ſome approximation at leaſt would be had by taking off from $\sqrt{d}$ ſome conſtant ſmall quantity. This is evident: For ſuch a diminution will have but a trifling effect when $\sqrt{d}$ is great, and its effect will increaſe rapidly when $\sqrt{d}$ is very ſmall. He therefore tried various values for this ſubtraction, and compared the reſults with the former experiments; and he found, that if in every caſe $\sqrt{d}$ be diminiſhed by one-tenth of an inch, the calculated diſcharges would agree very exactly with the experiment. Therefore, inſtead of $\sqrt{d}$, he makes uſe of $\sqrt{d} - 0{,}1$, and finds this quantity always proportional to $\sqrt{m g}$, or finds that $\frac{\sqrt{mg}}{\sqrt{d} - 0{,}1}$ is a conſtant quantity, or very nearly ſo. It varied from 297 to 287 in all ſections from that of a very ſmall pipe to that of a little canal. In the large ſections of canals and rivers it diminiſhed ſtill more, but never was leſs than 256.

Theory.

52 The reſult agreeable to our diſtincteſt notions of the action of water and its bed.

This reſult is very agreeable to the moſt diſtinct notions that we can form of the mutual actions of the water and its bed. We ſee, that when the motion of water is obſtructed by a ſolid body, which deflects the paſſing filament, the diſturbance does not extend to any conſiderable diſtance on the two ſides of the body. In like manner, the ſmall diſturbances, and imperceptible curvilineal motions, which are occaſioned by the infiniteſimal inequalities of the channel, muſt extend to a very ſmall diſtance indeed from the ſides and bottom of the channel. We know, too, that the mutual adheſion or attraction of water for the ſolid bodies which are moiſtened by it, extends to a very ſmall diſtance; which is probably the ſame, or nearly ſo, in all caſes. Mr Buat obſerved, that a ſurface of 23 ſquare inches, applied to the ſurface of ſtagnant water, lifted 1601 grains; another of 5½ ſquare inches lifted 365: this was at the rate of 65 grains per inch nearly, making a column of about one ſixth of an inch high. Now this effect is very much analagous to a real contraction of the capacity of the channel. The water may be conceived as nearly ſtagnant to this ſmall diſtance from the border of the ſection. Or, to ſpeak more accurately, the diminution of the progreſſive velocity occaſioned by the friction and adheſion of the ſides, decreaſes very rapidly as we recede from the ſides, and ceaſes to be ſenſible at a very ſmall diſtance.

53 And confirmed by experiment.

The writer of this article verified this by a very ſimple and inſtructive experiment. He was making experiments on the production of vortices, in the manner ſuggeſted by Sir Iſaac Newton, by whirling a very accurate and ſmoothly poliſhed cylinder in water; and he found that the rapid motion of the ſurrounding water was confined to an exceeding ſmall diſtance from the cylinder, and it was not till after many revolutions that it was ſenſible even at the diſtance of half an inch. We may, by the way, ſuggeſt this as the beſt form of experiments for examining the reſiſtances of pipes. The motion excited by the whirling cylinder in the ſtagnant water is equal and oppoſite to the motion loſt by water paſſing along a ſurface equal to that of the cylinder with the ſame velocity. Be this as it may, we are juſtified in conſidering, with Mr Buat, the ſection of the ſtream as thus diminiſhed by cutting off a narrow border all round the touching parts, and ſuppoſing that the motion and diſcharge is the ſame as if the root of the mean depth of the ſection were diminiſhed by a ſmall quantity, nearly conſtant. We ſee, too, that the effect of this muſt be inſenſible in great canals and rivers; ſo that, fortunately, its quantity is beſt aſcertained by experiments made with ſmall pipes. This is attended with another conveniency, in the opinion of Mr Buat, namely, that the effect

Theory. effect of viſcidity is moſt ſenſible in great maſſes of water in flow motion, and is almoſt inſenſible in ſmall pipes, ſo as not to diſturb theſe experiments. We may therefore aſſume 297 as the general value of $\frac{\sqrt{mg}}{\sqrt{d}-0,1}$.

Since we have $\frac{\sqrt{mg}}{\sqrt{d}-0,1} = 297$, we have alſo $m = \frac{297^2}{g}(\sqrt{d}-0,1)^2$, $= \frac{88209}{362}(\sqrt{d}-0,1)^2$, $= 243,7\ (\sqrt{d}-0,1)^2$. This we may expreſs by $n(\sqrt{d}-0,1)^2$. And thus, when we have expreſſed the effect of friction by $\frac{V^2}{m}$, the quantity m is variable, and its general value is $\frac{V^2}{n(\sqrt{d}-0,1)^2}$, in which n is an invariable abſtract number equal to 243,7 given by the nature of the reſiſtance which water ſuſtains from its bed, and which indicates its intenſity.

And, laſtly, ſince $m = n(\sqrt{d}-0,1)^2$, we have $\sqrt{mg} = \sqrt{ng}(\sqrt{d}-0,1)$, and the expreſſion of the velocity V, which water acquires and maintains along any channel whatever, now becomes $V = \frac{\sqrt{ng}(\sqrt{d}-0,1)}{X}$, or $\frac{297(\sqrt{d}-0,1)}{X}$, in which X is alſo a variable quantity, depending on the ſlope of the ſurface or channel, and expreſſing the accelerating force which, in the caſe of water in train, is in equilibrio with the reſiſtances expreſſed by the numerator of the fraction.

54 Law of acceleration inveſtigated. Having ſo happily ſucceeded in aſcertaining the variations of reſiſtance, let us accompany Mr Buat in his inveſtigation of the law of acceleration, expreſſed by the value of X.

Experience, in perfect agreement with any diſtinct opinions that we can form on this ſubject, had already ſhowed him, that the reſiſtances increaſed in a ſlower ratio than that of the ſquares of the velocities, or that the velocities increaſed ſlower than $\sqrt{s}$. Therefore, in the formula $V = \frac{\sqrt{ng}(\sqrt{d}-0,1)}{X}$, which, for one channel, we may expreſs thus, $V = \frac{A}{X}$, we muſt admit that X is ſenſibly equal to $\sqrt{s}$ when the ſlope is very ſmall or s very great. But, that we may accurately expreſs the velocity in proportion as the ſlope augments, we muſt have X greater than $\sqrt{s}$; and moreover, $\frac{\sqrt{s}}{X}$ muſt increaſe as $\sqrt{s}$ diminiſhes. Theſe conditions are neceſſary, that our values of V, deduced from the formula $V = \frac{A}{X}$, may agree with the experiment.

In order to comprehend every degree of ſlope, we muſt particularly attend to the motion through pipes, becauſe open canals will not furniſh us with inſtances of exact TRAINS with great ſlopes and velocities. We can make pipes vertical. In this caſe $\frac{1}{s}$ is $\frac{1}{1}$, and the velocity is the greateſt poſſible for a train by the action of gravity: But we can give greater velocities than this by increaſing the head of water beyond what produces the velocity of the train. Theory.

Let AB (fig. 10.) be a vertical tube, and let CA be the head competent to the velocity in the tube, which we ſuppoſe to be in train. The ſlope is 1, and the full weight of the column in motion is the preciſe meaſure of the reſiſtance. The value of $\frac{1}{s}$, conſidered as a ſlope, is now a maximum; but, conſidered as expreſſing the proportion of the weight of the column in motion to the weight which is in equilibrio with the reſiſtance, it may not be a maximum; it may ſurpaſs unity, and s may be leſs than 1. For if the veſſel be filled to E, the head of water is increaſed, and will produce a greater velocity, and this will produce a greater reſiſtance. The velocity being now greater, the head EF which imparts it muſt be greater than CA. But it will not be equal to EA, becauſe the uniform velocities *are found* to increaſe faſter than the ſquare roots of the preſſures. This is the general fact. Therefore F is above A, and the weight of the column FB, now employed to overcome the reſiſtance, is greater than the weight of the column AB in motion. In ſuch caſes, therefore, $\frac{1}{s}$, greater than unity, is a ſort of fictitious ſlope, and only repreſents the proportion of the reſiſtance to the weight of the moving column. This proportion may ſurpaſs unity.

But it cannot be infinite: for ſuppoſing the head of water infinite; if this produce a finite velocity, and we deduct from the whole height the height correſponding to this finite velocity, there will remain an infinite head, the meaſure of an infinite reſiſtance produced by a finite velocity. This does not accord with the obſerved law of the velocities, where the reſiſtances actually do not increaſe as faſt as the ſquares of the velocities. Therefore an infinite head would have produced an infinite velocity, in oppoſition to the reſiſtances: taking off the head of the tube, competent to this velocity, at the entry of the tube, which head would alſo be infinite, the remainder would in all probability be finite, balancing a finite reſiſtance.

Therefore the value of s may remain finite, although the velocity be infinite; and this is agreeable to all our cleareſt notions of the reſiſtances.

Adopting this principle, we muſt find a value of X which will anſwer all theſe conditions. 2. It muſt be ſenſibly proportional to $\sqrt{s}$, while s is great. It muſt always be leſs than $\sqrt{s}$. 3. It muſt deviate from the proportion of $\sqrt{s}$, ſo much the more as $\sqrt{s}$ is ſmaller. 4. It muſt not vaniſh when the velocity is infinite. 5. It muſt agree with a range of experiments with every variety of channel and of ſlope.

We ſhall underſtand the nature of this quantity X better by repreſenting by lines the quantities concerned in forming it.

If the velocities were exactly as the ſquare roots of the ſlope, the equilateral hyperbola NKS (fig. 10. n° 2) between its aſſymptotes MA, AB, would repreſent the equation $V = \frac{A}{\sqrt{s}}$. The values of $\sqrt{s}$ would be repreſented by the abſciſſæ, and the velocities by the ordinates, and $V\sqrt{s} = A$ would be the power of the hyperbola. But ſince theſe velocities are not ſenſibly

equal

Theory. equal to $\frac{A}{\sqrt{s}}$ except when $\sqrt{s}$ is very great, and deviate the more from this quantity as $\sqrt{s}$ is fmaller; we may repreſent the velocities by the ordinates of another curve PGT, which approaches very near to the hyperbola, at a great diſtance from A along AB; but ſeparates from it when the abſciſſæ are fmaller: ſo that if AQ repreſents that value of $\sqrt{s}$ (which we have ſeen may become leſs than unity), which correſponds to an infinite velocity, the line QO may be the aſſymptote of the new curve. Its ordinates are equal to $\frac{A}{X}$ while thoſe of the hyperbola are equal to $\frac{A}{\sqrt{s}}$. Therefore the ratio of theſe ordinates or $\frac{\sqrt{s}}{X}$ ſhould be ſuch that it ſhall be ſo much nearer to unity as $\sqrt{s}$ is greater, and ſhall ſurpaſs it ſo much the more as $\sqrt{s}$ is ſmaller.

To expreſs X therefore as ſome function of $\sqrt{s}$ ſo as to anſwer theſe conditions, we ſee in general that X muſt be leſs than $\sqrt{s}$. And it muſt not be equal to any power of $\sqrt{s}$ whoſe index is leſs than unity, becauſe then $\frac{\sqrt{s}}{X}$ would differ ſo much the more from unity as $\sqrt{s}$ is greater. Nor muſt it be any multiple of $\sqrt{s}$ ſuch as $q\sqrt{s}$, for the ſame reaſon. If we make $X=\sqrt{s}-K$, K being a conſtant quantity, we may anſwer the firſt condition pretty well. But K muſt be very ſmall, that X may not become equal to nothing, except in ſome exceedingly ſmall value of $\sqrt{s}$. Now the experiments will not admit of this, becauſe the ratio $\frac{\sqrt{s}}{\sqrt{s}-K}$ does not increaſe ſufficiently to correſpond with the velocities which we obſerve in certain ſlopes, unleſs we make K greater than unity, which again is inconſiſtent with other experiments. We learn from ſuch canvaſſing that it will not do to make K a conſtant quantity. If we ſhould make it any fractionary power of $\sqrt{s}$, it would make $X=0$, that is, nothing, when s is $=1$, which is alſo contrary to experience. It would ſeem, therefore, that nothing will anſwer for K but ſome power of $\sqrt{s}$ which has a variable index. The logarithm of $\sqrt{s}$ has this property. We may therefore try to make $X=\sqrt{s}-\log.\sqrt{s}$. According if we try the equation $V=\frac{A}{\sqrt{s}-\text{hyp. log. }\sqrt{s}}$, we ſhall find a very great agreement with the experiments till the declivity becomes conſiderable, or about $\frac{1}{15}$, which is much greater than any river. But it will not agree with the velocities obſerved in ſome mill courſes, and in pipes of a little greater declivity, and gives a velocity that is too ſmall; and in vertical pipes the velocity is not above one half of the true one. We ſhall get rid of moſt of theſe incongruities if we make K conſiſt of the hyperbolic logarithm of $\sqrt{s}$ augmented by a ſmall conſtant quantity, and by trying various values for this conſtant quantity, and comparing the reſults with experiment, we may hit on one ſufficiently exact for all practical purpoſes.

Mr De Buat, after repeated trials, found that he would have a very great conformity with experiment by making $K=\log.\sqrt{s+1,6}$, and that the velocities exhibited in his experiments would be very well repreſented by the formula $V=\frac{29^{\circ}(\sqrt{d}-0,1)}{\sqrt{s}-L\sqrt{s+1,6}}$. Theory.

55 Mutual adheſion of the particles of water.

There is a circumſtance which our author ſeems to have overlooked on this occaſion, and which is undoubtedly of great effect in theſe motions, viz. the mutual adheſion of the particles of water. This cauſes the water which is deſcending (in a vertical pipe for example) to drag more water after it, and thus greatly increaſes its velocity. We have ſeen an experiment in which the water iſſued from the bottom of a reſervoir through a long vertical pipe having a very gentle taper. It was 15 feet long, one inch diameter at the upper end, and two inches at the lower. The depth of the water in the reſervoir was exactly one foot; in a minute there were diſcharged $2\frac{9}{10}$ cubic feet of water. It muſt therefore have iſſued through the hole in the bottom of the reſervoir with the velocity of 8,85 feet per ſecond. And yet we know that this head of water could not make it paſs through the hole with a velocity greater than 6,56 feet per ſecond. This increaſe muſt therefore have ariſen from the cauſe we have mentioned, and is a proof of the great intenſity of this force. We doubt not but that the diſcharge might have been much more increaſed by proper contrivances; and we know many inſtances in water pipes where this effect is produced in a very great degree.

56 An actual caſe, in Scotland.

The following caſe is very diſtinct: water is brought into the town of Dunbar in the county of Eaſt Lothian from a ſpring at the diſtance of about 3200 yards. It is conveyed along the firſt 1100 yards in a pipe of two inches diameter, and the declivity is 12 feet nine inches; from thence the water flows in a pipe of $1\frac{1}{4}$ diameter, with a declivity of 44 feet 3 inches, making in all 57 feet. When the work was carried as far as the two-inch pipe reached, the diſcharge was found to be 27 Scotch pints, of $103\frac{1}{2}$ cubic inches each in a minute. When it was brought into the town, the diſcharge was 28. Here it is plain that the deſcent along the ſecond ſtretch of the pipe could derive no impulſion from the firſt. This was only able to ſupply 27 pints, and to *deliver* it into a pipe of equal bore. It was not equivalent to the forcing it into a ſmaller pipe, and almoſt doubling its velocity. It muſt therefore have been *dragged* into this ſmaller pipe by the weight of what was deſcending along it, and this water was exerting a force equivalent to a head of 16 inches, increaſing the velocity from 14 to about 28.

57 Proves that the ſmalleſt declivity will produce a current.

It muſt be obſerved, that if this formula be juſt, there can be no declivity ſo ſmall that a current of water will not take place in it. And accordingly none has been obſerved in the ſurface of a ſtream when this did not happen. But it alſo ſhould happen with reſpect to any declivity of bottom. Yet we know that water will hang on the ſloping ſurface of a board without proceeding further. The cauſe of this ſeems to be the adheſion of the water combined with its viſcidity The viſcidity of a fluid preſents a certain force which muſt be overcome before any current can take place.

A ſeries of important experiments were made by our author in order to aſcertain the relation between the velocity at the ſurface of any ſtream and that at the

Theory. the bottom. These are curious and valuable on many accounts. One circumstance deserves our notice here, viz. that *the difference between the superficial and bottom velocities of any stream are proportional to the square roots of the superficial velocities.* From what has been already said on the gradual diminution of the velocities among the adjoining filaments, we must conclude that the same rule holds good with respect to the velocity of separation of two filaments immediately adjoining. Hence we learn that this velocity of separation is in all cases indefinitely small, and that we may, without danger of any sensible error, suppose it a constant quantity in all cases.

58 A constant part of the accelerating force employed in overcoming the viscidity, &c.

We think, with our ingenious author, that on a review of these circumstances, there is a constant or invariable portion of the accelerating force employed in overcoming this viscidity and producing this mutual separation of the adjoining filaments. We may express this part of the accelerating force by a part $\frac{1}{S}$ of that slope which constitutes the whole of it. If it were not employed in overcoming this resistance, it would produce a velocity which (on account of this resistance) is not produced, or is lost. This would be $\frac{A}{\sqrt{S}-L\sqrt{S}}$. This must therefore be taken from the velocity exhibited by our general formula. When thus corrected, it would become $V = (\sqrt{d}-0,1)\left(\frac{\sqrt{ng}}{\sqrt{s}-L\sqrt{s+1,6}} - \frac{\sqrt{ng}}{\sqrt{S}-L\sqrt{S}}\right)$. But as the term $\frac{\sqrt{ng}}{\sqrt{S}-L\sqrt{S}}$ is compounded only of constant quantities, we may express it by a single number. This has been collected from a scrupulous attention to the experiments (especially in canals and great bodies of water moving with very small velocities; in which case the effects of viscidity must become more remarkable), and it appears that it may be valued at $\sqrt{\frac{\text{inch}}{0,09}}$ or 0,3 inches very nearly.

From the whole of the foregoing considerations, drawn from nature, supported by such reasoning as our most distinct notions of the internal motions will admit, and authorised by a very extensive comparison with experiment, we are now in a condition to conclude a complete formula, expressive of the uniform motion of water, and involving every circumstance which appears to have any share in the operation.

Therefore let

59 Formula expressing the uniform motion of water.

V represent the mean velocity, in inches per second, of any current of water, running uniformly, or which is IN TRAIN, in a pipe or open channel, whose section, figure, and slope, are constant, but its length indefinite.

d the hydraulic mean depth, that is, the quotient arising from dividing the section of the channel, in square inches, by its border, expressed in linear inches.

s The slope of the pipe, or of the surface of the current. It is the denominator of the fraction expressing this slope, the numerator being always unity; and is had by dividing the expanded length of the pipe or channel by the difference of height of its two extremities.

g The velocity (in inches per second) which a heavy body acquires by falling during one second. Theory.

n An abstract constant number, determined by experiment to be 243,7.

L the hyperbolic logarithm of the quantity to which it is prefixed, and is had by multiplying the common logarithm of that quantity by 2,3026.

We shall have in every instance

$$V = \frac{\sqrt{ng}\,(\sqrt{d}-0,1)}{\sqrt{s}-L.\sqrt{s+1,6}} - 0,3\,(\sqrt{d}-0,1)$$

This, in numbers, and English measure, is

$$V = \frac{307\,(\sqrt{d}-0,1)}{\sqrt{s}-L\sqrt{s+1,6}} - 0,3\,(\sqrt{d}-0,1)$$

And in French measure

$$V = \frac{297\,(\sqrt{d}-0,1)}{\sqrt{s}-L\sqrt{s+1,6}} - 0,3\,(\sqrt{d}-0,1)$$

The following table contains the real experiments from which this formula was deduced, and the comparison of the real velocities with the velocities computed by the formula. It consists of two principal sets of experiments. The first are those made on the motion of water in pipes. The second are experiments made on open canals and rivers. In the first set, column 1st contains the number of the experiments; 2d, the length of the tube; 3d, the height of the reservoir; 4th, the values of S, deduced from column second and third; 5th gives the observed velocities; and 6th the velocities calculated by the formula.

In the second set, column 2d gives the area of the section of the channel; 3d, the border of the canal or circumference of the section, deducting the horizontal width, which sustains no friction; 4th, the square root $\sqrt{d}$ of the hydraulic mean depth; 5th, the denominator S of the slope; 6th, the observed mean velocities; and 7th, the mean velocities by the formula. In the last ten experiments on large canals and a natural river the 6th column gives the observed velocities at the surface.

SET I. *Experiments on Pipes.*

60 Table containing the experiment from which the formula is deduced.

Experiments by Chevalier DE BUAT.

N°	Length of Pipe.	Height of Reservoir.	Values of *s*.	Velocities observed.	Velocities calculated
			Vertical Tube $\frac{2}{3}$ of a Line in Diameter and $\sqrt{d} = 0,117851$.		
	Inch.	Inch.	Inch.	Inch.	Inch.
1	12	16,166	0,75636	11,704	12,006
2	12	13,125	0,9307	9,753	10,576
			Vertical Pipe $1\frac{1}{2}$ Lines Diameter, and $\sqrt{d} = 0,176776$ Inch.		
3	34,166	42,166	0,9062	45,468	46,210
4	Do.	38,333	0,9951	43,156	43,721
5	Do.	36,666	1,0396	42,385	42,612
6	Do.	35,333	1,0781	41,614	41,714

The same Pipe horizontal.

N°	Length of Pipe.	Height of Reservoir.	Values of x.	Velocities observed.	Velocities calculated.
	Inch.	Inch.	Inch.	Inch.	Inch.
7	34,166	14,583	2,5838	26,202	25,523
8	Do.	9,292	4,0367	21,064	19,882
9	Do.	5,292	7,036	14,642	14,447
10	Do.	2,083	17,6378	7,320	2,351

Vertical Pipe 2 Lines Diameter, and $\sqrt{d}=0,204124$.

11	36,25	51,250	0,85451	64,373	64,945
12	Do.	45,250	0,96338	59,605	60,428
13	Do.	41,916	1,03808	57,220	57,838
14	Do.	38,750	1,12047	54,186	55,321

Same Pipe with a slope of $\frac{1}{1,3024}$

15	36,25	33,500	1,29174	51,151	50,983

Same Pipe horizontal.

16	36,25	15,292	2,7901	33,378	33,167
17	Do.	8,875	4,76076	25,430	24,553
18	Do.	5,292	7,89587	19,940	18,313
19	Do.	2,042	20,01637	10,620	10,492

Vertical Pipe 2,02 Lines Diameter, and $\sqrt{d}=0,245798$.

20	36,25	53,250	0,95235	85,769	85,201
21	Do.	50,250	1,00642	82,471	82,461
22	Do.	48,333	1,0444	81,646	80,698
23	Do.	48,333	1,0444	79,948	
24	Do.	47,916	1,0529	81,027	80,318
25	Do.	44,750	1,1241	76,079	77,318
26	Do.	41,250	1,2157	73,811	73,904

The same Pipe with the slope $\frac{1}{1,3024}$

27	36,25	37,5	1,3323	70,822	70,138

The same Pipe Horizontal.

28	36,25	20,166	2,4303	51,956	50,140
29	Do.	9,083	5,2686	33,577	32,442
30	Do.	7,361	6,4504	28,658	28,801
31	Do.	5,	9,3573	23,401	23,195
32	Do.	4,916	9,5097	22,989	22,974
33	Do.	4,833	9,6652	22,679	22,754
34	Do	3,708	12,4624	19,587	19,550
35	Do.	2,713	16,3135	16,631	16,324
36	Do.	2,083	21,6639	14,295	14,003
37	Do.	1,625	27,5102	12,680	12,115
38	Do.	0,833	52,3427	7,577	8,215

Pipe sensibly Horizontal $\sqrt{d}=0,5$, *or 1 Inch Diameter.*

39	117	36	5,6503	84,945	85,524
40	117	26,666	7,48	71,301	72,617
41	138,5	20,950	10,3215	58,808	60,034
42	117	18	10,7880	58,310	58,472

N°	Length of Pipe	Height of Reservoir.	Values of x.	Velocities observed.	Velocities calculated.
	Inch.	Inch.	Inch.	Inch.	Inch.
43	138,5	6	33,1962	29,341	29,663
44	737	23,7	33,6658	28,669	29,412
45	Do.	14,6	54,2634	21,856	22,056
46	Do.	13,7	57,7772	20,970	21,240
47	Do.	12,32	64,1573	19,991	19,950
48	Do.	8,96	87,8679	16,625	16,543
49	Do.	8,96		16,284	
50	Do.	7,780	101,0309	15,112	15,232
51	Do.	5,93	132,1617	13,315	13,005
52	Do.	4,2	186,0037	10,671	10,656
53	Do.	4,2		10,441	
54	138,5	0,7	257,8863	8,689	8,824
55	737	0,5	1540,75	3,623	3,218
56	737	0,15	5113,42	1,589	1,647

Experiments by the Abbé Bossut.

Horizontal Pipe 1 Inch Diameter $\sqrt{d}=0,5$.

57	600	12	54,5966	22,282	21,975
58	600	4	161,312	12,223	11,756

Horizontal Pipe $1\frac{1}{3}$ *Inch Diameter* $\sqrt{d}=0,5774$.

59	360	24	19,0781	48,534	49,515
60	720	24	33,6166	34,473	35,130
61	360	12	37,0828	33,160	33,106
62	1080	24	48,3542	28,075	28,211
63	1440	24	63,1806	24,004	24,023
64	720	12	66,3020	23,360	23,345
65	1800	24	78,0532	21,032	21,182
66	2160	24	92,9474	18,896	19,096
67	1080	12	95,8756	18,943	18,749
68	1440	12	125,6007	16,128	15,991
69	1800	12	155,4015	14,066	14,119
70	2160	12	185,2487	12,560	12,750

Horizontal Pipe 2,01 Inch Diameter $\sqrt{d}=0,708946$.

71	360	24	21,4709	58,903	58,803
72	720	24	35,8[illegible]52	43,	43,136
73	360	12	41,2759	40,322	39,587
74	1080	24	56,4119	35,765	35,096
75	1440	24	65,1448	30,896	30,096
76	720	12	70,1426	29,215	28,796
77	1800	24	79,8487	27,470	26,639
78	2160	24	94,7961	27,731	24,079
79	1080	12	99,4979	23,806	23,400
80	1440	12	129,6727	20,707	20,076
81	1800	12	158,7512	18,304	17,788
82	2160	12	188,5179	16,377	16,097

Mr Couplet's *Experiments at Versailles.*

Pipe 5 Inches Diameter $\sqrt{d}=1,11803$.

83	84240	25	3378,26	5,323	5,287
84	Do.	24	3518,98	5,213	5,168
85	Do.	21,083	4005,66	4,806	4,807
86	Do.	16,750	5041,61	4,127	4,225
87	Do.	11,333	7450,42	3,154	3,388
88	Do.	5,583	15119,96	2,011	2,254

Pipe 18 Inches Diameter $\sqrt{d}=2,12132$.

89	43200	145,083	304,973	39,159	40,510

Theory.

Set II. *Experiments with a Wooden Canal.*

N°	Section of Canal.	Border of Canal.	Values of $\sqrt{d}$.	Values of s.	Mean Velocity observed	Mean Veloc. calc.
			Trapezium Canal.			
	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.
0	18,84	13,06	1,20107	212	27,51	27,19
91	50,60	29,50	1,3096	212	28,92	29,88
92	83,43	26,	1,7913	412	27,14	28,55
93	27,20	15,31	1,3329	427	18,28	20,39
94	39,36	18,13	1,4734	427	20,30	22,71
95	50,44	20,37	1,5736	427	22,37	24,37
96	56,43	21,50	1,6201	427	23,54	25,14
97	98,74	28,25	1,8696	432	28,29	29,06
98	100,74	28,53	1,8791	432	28,52	29,23
99	119,58	31,06	1,9622	432	30,16	30,60
100	126,20	31,91	1,9887	432	31,58	31,03
101	130,71	32,47	2,0064	432	31,89	31,32
102	135,32	33,03	2,0241	432	32,52	31,61
103	20,83	13,62	1,2367	1728	8,94	8,58
104	34,37	17,	1,4219	1728	9,71	9,98
105	36,77	17,56	1,4471	1728	11,45	10,17
106	42,01	18,69	1,4992	1728	12,34	10,53
			Rectangular Canal.			
107	34,50	21,25	1,27418	458	20,24	18,66
108	86,25	27,25	1,77908	458	28,29	26,69
109	34,50	21,25	1,27418	929	13,56	12,53
110	35,22	21,33	1,28499	1412	9,20	10,01
111	51,75	23,25	1,49191	1412	12,10	11,76
112	76,19	26,08	1,70921	1412	14,17	13,59
113	105,78	29,17	1,90427	1412	15,55	15,24
114	69,	25,25	1,65308	9288	4,59	4,56
115	155,25	35,25	2,09868	9288	5,70	5,86

Set III. *Experiments on the Canal of* Jard.

N°	Section of Canal.	Border of Canal.	Values of $\sqrt{d}$.	Values of s.	Velocity obf. at Surface.	Velocity calculated
116	16252	402	6,3583	8919	17,42	18,77
117	11905	366	5,70320	11520	12,17	14,52
118	10475	360	5,3942	15360	15,74	11,61
119	7858	340	4,8074	21827	9,61	8,38
120	7376	337	4,6784	27648	7,79	7,07
121	6125	324	4,3475	27648	7,27	6,55

Experiments on the River Haine.

N°	Section of River	Border of River	Values of $\sqrt{d}$.	Values of s.	Velocity at Surface	Velocity (mean) calcula.
122	31498	569	7,43974	6048	35,11	27,62
123	38838	601	8,03879	6413	31,77	28,76
124	30905	568	7,37632	32951	13,61	10,08
125	39639	604	8,10108	35723	15,96	10,53

Theory.

This compariſon muſt be acknowledged to be moſt ſatisfactory, and ſhows the great penetration and addreſs of the author, in ſo ſucceſsfully fitting and appreciating the ſhare which each co-operating circumſtance has had in producing the very intricate and complicated effect. It adds ſome weight to the principles on which he has proceeded in this analyſis of the mechaniſm of hydraulic motion, and muſt give us great confidence in a theory ſo fairly eſtabliſhed on a very copious induction. The author offers it only as a rational and well-founded probability. To this character it is certainly intitled; for the ſuppoſitions made in it are agreeable to the moſt diſtinct notions we can form of theſe internal motions. And it muſt always be remembered that the inveſtigation of the formula, although it be rendered ſomewhat more perſpicuous by thus having recourſe to thoſe notions, has no dependence on the truth of the principles. For it is, in fact, nothing but a claſſification of experiments, which are grouped together by ſome one circumſtance of ſlope, velocity, form of ſection, &c. in order to diſcover the law of the changes which are induced by a variation of the circumſtances which do not reſemble. The procedure was preciſely ſimilar to that of the aſtronomer when he deduces the elements of an orbit from a multitude of obſervations. This was the taſk of Mr de Buat and he candidly and modeſtly informs us, that the finding out analytical forms of expreſſion which would exhibit theſe changes was the work of Mr Benezech de St Honoré, a young officer of engineers, and his colleague in the experimental courſe. It does honour to his ſkill and addreſs; and we think the whole both a pretty and inſtructive ſpecimen of the method of diſcovering the laws of nature in the midſt of complicated phenomena. Daniel Bernoulli firſt gave the rules of this method, and they have been greatly improved by Lambert, Condorcet, and De la Grange. Mr Coulomb has given ſome excellent examples of their application to the diſcovery of the laws of friction, of magnetical and electrical attraction, &c. But this preſent work is the moſt perſpicuous and familiar of them all. It is the empirical method of generaliſing natural phenomena, and of deducing general rules, of which we can give no other demonſtration but that they are faithful repreſentations of matters of fact. We hope that others, encouraged by the ſucceſs of Mr de Buat, will follow this example, where public utility is preferred to a diſplay of mathematical knowledge.

61 The theory a well-founded probability and

Although the author may not have hit upon the preciſe *modus operandi*, we agree with him in thinking that nature ſeems to act in a way not unlike what is here ſuppoſed. At any rate, the range of experiments is ſo extenſive, and ſo multifarious, that few caſes can occur which are not included among them. The experiments will always retain their value (as we preſume that they are faithfully narrated), whatever may become of the theory; and we are confident that the formula will give an anſwer to any queſtion to which it may be applicable infinitely preferable to the vague gueſs of the moſt ſagacious and experienced engineer.

62 The experiments highly valuable.

We muſt however obſerve, that as the experiments on pipes were all made with ſcrupulous care in the contrivance and execution of the apparatus, excepting only thoſe of Mr Couple on the main pipes at Verſailles,

Theory.

63 The velocity given by the formula too large for ordinary works.

we may presume that the formula gives the greatest velocities which can be expected. In ordinary works, where joints are rough or leaky, where drops of solder hang in the inside, where cocks intervene with deficient water-ways, where pipes have awkward bendings, contractions, or enlargements, and where they may contain sand or air, we should reckon on a smaller velocity than what results from our calculation; and we presume that an undertaker may with confidence promise $\frac{4}{5}$ of this quantity without any risk of disappointing his employer. We imagine that the actual performance of canals will be much nearer to the formula.

We have made inquiry after works of this kind executed in Britain, that we might compare them with the formula. But all our canals are locked and without motion; and we have only learned by an accidental information from Mr Watt, that a canal in his neighbourhood, which is 18 feet wide at the surface, and seven feet at the bottom, and four feet deep, and has a slope of one inch in a quarter of a mile, runs with the velocity of 17 inches per second at the surface, 10 at the bottom, and 14 in the middle. If we compute the motion of this canal by our formula, we shall find the mean velocity to be $13\frac{1}{3}$.

No river in the world has had its motions so much scrutinised as the Po about the end of the last century. It had been a subject of 100 years continual litigation between the inhabitants of the Bolognese and the Ferrarese, whether the waters of the Rheno should be thrown into the Tronco de Venezia or Po Grande. This occasioned very numerous measures to be taken of its sections and declivity, and the quantities of water which it contained in its different states of fullness. But, unfortunately, the long established methods of measuring waters, which were in force in Lombardy, made no account of the velocity, and not all the intreaties of Castelli, Grandi, and other moderns, could prevail on the visitors in this process to deviate from the established methods. We have therefore no minute accounts of its velocity, though there are many rough estimates to be met with in that valuable collection published at Florence in 1723, of the writings on the motion of rivers. From them we have extracted the *only precise observations* which are to be found in the whole work.

64 Observations on the velocity of the Po

The Po Grande receives no river from Stellata to the sea, and its slope in that interval is found most surprisingly uniform, namely six inches in the mile (reduced to English measure). The breadth in its great freshes is 759 feet at Lago Scuro, with a very uniform depth of 31 feet. In its lowest state (in which it is called *Po Magra*), its breadth is not less than 700, and its depth about $10\frac{1}{2}$.

The Rheno has a uniform declivity from the Ponte Emilio to Vigarano of 15 inches per mile. Its breadth in its greatest freshes is 189 feet, and its depth 9.

Signor Corrade in his report says, that in the state of the great freshes the velocity of the Rheno is most exactly $\frac{4}{5}$ of that of the Po.

Grandi says that a great fresh in the Rheno employs 12 hours (by many observations of his own) to come from Ponte Emilio to Vigarano, which is 30 miles. This is a velocity of 44 inches per second. And, by Corrade's proportion, the velocity of the Po Grande must be 55 inches per second.

Montanari's observation gives the Po Magra a velocity of 31 inches per second.

Let us compare these velocities with the velocities calculated by Buat's formula.

The hydraulic mean depths d and D of the Rheno and Po in the great freshes deduced from the above measures, are 98,6 and 344 inches; and their slopes s and S are $\frac{1}{5225}$ and $\frac{1}{10560}$. This will give

$$\frac{307\,(\sqrt{D}-0,1)}{\sqrt{S}-L\sqrt{S+1,6}}-0,3\,(\sqrt{D}-0,1)=52,176 \text{ inches}$$

and $$\frac{307\,(\sqrt{d}-0,1)}{\sqrt{s}-L\sqrt{s+1,6}}-0,3\,(\sqrt{d}-0,1)=46,727$$

inches.

These results differ very little from the velocities abovementioned. And if the velocity corresponding to a depth of 31 feet be deduced from that observed by Montanari in the Po Magra 10 feet deep, on the supposition that they are in the proportion of $\sqrt{d}$, it will be found to be about $53\frac{1}{2}$ inches per second.

65 Highly to the credit of the theory.

This comparison is therefore highly to the credit of the theory, and would have been very agreeable to M. de Buat, had he known it, as we hope it is to our readers.

We have collected many accounts of water pipes, and made the comparisons, and we flatter ourselves that these have enabled us to improve the theory. They shall appear in their proper place; and we may just observe here, that the two-inch pipe, which we formerly spoke of as conveying the water to Dunbar, should have yielded only $25\frac{2}{3}$ Scotch pints per minute by the formula, instead of 27; a small error.

We have, therefore, no hesitation in saying that this single formula of the uniform motion of water is one of the most valuable presents which natural science and the arts have received during the course of this century.

We hoped to have made this fortunate investigation of the chevalier de Buat still more acceptable to our readers by another table, which should contain the values of $\frac{307}{\sqrt{s}-L\sqrt{s+1,6}}$ ready calculated for every declivity that can occur in water pipes, canals, or rivers. Aided by this, which supersedes the only difficult part of the computation, a person could calculate the velocity for any proposed case in less than two minutes. But we have not been able to get it ready for its appearance in this article, but we shall not fail to give it when we resume the subject in the article *Water-Works*; and we hope even to give its results on a scale which may be carried in the pocket, and will enable the unlearned practitioner to solve any question with accuracy in half a minute.

We have now established in some measure a Theory of Hydraulics, by exhibiting a general theorem which expresses the relation of the chief circumstances of all such motions as have attained a state of permanency, in so far as this depends on the magnitude, form, and slope of the channel. This permanency we have expressed by the term train, saying that the stream is *in train*.

We proceed to consider the subordinate circumstances contained in this theorem; such as, *1st*, The forms which nature or art may give to the bed of a running stream, and the manner of expressing this form in our theorem. *2d*, The gradations of the velocity, by which

it

Theory. it decreaſes in the different filaments, from the axis or moſt rapid filament to the border; and the connection of this with the mean velocity, which is expreſſed by our formula. 3*d*, Having acquired ſome diſtinct notions of this, we ſhall be able to ſee the manner in which undiſturbed nature works in forming the beds of our rivers, the forms which ſhe affects, and which we muſt imitate in all their local modifications, if we would ſecure that permanency which is the evident aim of all her operations. We ſhall here learn the mutual action of the current and its bed, and the circumſtances which enſure the ſtability of both. Theſe we may call the *regimen* or the *conſervation* of the ſtream, and may ſay that it is *in regimen*, or *in conſervation*. This has a relation, not to the dimenſions and the ſlope alone, or to the accelerating force and the reſiſtance ariſing from mere inertia; it reſpects immediately the tenacity of the bed, and is different from *the train*.

66 Regimen of ſtreams what.

4*th*, Theſe pieces of information will explain the deviation of rivers from the rectilineal courſe; the reſiſtance occaſioned by theſe deviations; and the circumſtances on which the regimen of a winding ſtream depends.

§ 1. *Of the Forms of the Channel.*

67 The ſemicircular form moſt favourable to motion,

The numerator of the fraction which expreſſes the velocity of a river in train has $\sqrt{d}$ for one of its factors. That form, therefore, is moſt favourable to the motion which gives the greateſt value to what we have called the hydraulic mean depth d. This is the prerogative of the ſemicircle, and here d is equal to half the radius; and all other figures of the ſame area are the more favourable, as they approach nearer to a ſemicircle. This is the form, therefore, of all conduit pipes, and ſhould be taken for aqueducts which are built of maſonry. Eaſe and accuracy of execution, however, have made engineers prefer a rectangular form; but

68 But incompatible with regimen.

neither of theſe will do for a channel formed out of the ground. We ſhall ſoon ſee that the ſemicircle is incompatible with a regimen; and, if we proceed through the regular polygons, we ſhall find that the half hexagon is the only one which has any pretenſions to a regimen; yet experience ſhows us, that even its banks are too ſteep for almoſt any ſoil. A dry earthen bank, not bound together by graſs roots, will hardly ſtand with a

69 Banks that ſtand beſt.

ſlope of 45 degrees; and a canal which conveys running waters will not ſtand with this ſlope. Banks whoſe baſe is to their height as 4 to 3 will ſtand very well in moiſt ſoils, and this is a ſlope very uſually given. This form is even affected in the ſpontaneous operations of nature, in the channels which ſhe digs for the rills and rivulets in the higher and ſteeper grounds.

This form has ſome mathematical and mechanical properties which intitle it to ſome further notice. Let ABEC (fig. 11.) be ſuch a trapezium, and AHGC the rectangle of equal width and depth. Biſect HB and EG by the verticals FD and KI, and draw the verticals *b* B, *e*E. Becauſe AH : HB=3 : 4, we have AB=5, and BD2=, and FD=3, and BD + DF= BA. From theſe premiſſes it follows that the trapezium ABEC has the ſame area with the rectangle; for HB being biſected in D, the triangles ACF, BCD are equal. Alſo the border ABEC, which is touched by the paſſing ſtream, is equal to FDIK. Therefore the mean depth, which is the quotient of the area divided by the border, is the ſame in both; and this is the caſe, whatever is the width LE at the bottom, or even Theory. though there be no rectangle ſuch as *b* B E *e* interpoſed between the ſlant ſides.

70 Beſt form of a channel.

Of all rectangles, that whoſe breadth is twice the height, or which is half of a ſquare, gives the greateſt mean depth. If, therefore, F K be double of FD, the trapezium ABEC, which has the ſame area, will have the largeſt mean depth of any ſuch trapezium, and will be the beſt form of a channel for conveying running waters. In this caſe, we have AC=10, AH= 3, and BE=2. Or we may ſay that the beſt form is a trapezium, whoſe bottom width is $\frac{3}{7}$ of the depth, and whoſe extreme width is $\frac{10}{7}$. This form approaches very near to that width the torrents in the hills naturally dig for themſelves in uniform ground, where their action is not checked by ſtones which they lay bare, or which they depoſite in their courſe. This ſhows us, and it will be fully confirmed by and by, that the channel of a river is not a fortuitous thing, but has a relation to the conſiſtency of the ſoil and velocity of the ſtream.

A rectangle, whoſe breadth is $\frac{4}{7}$ of the depth of water, will therefore have the ſame mean depth with a triangle whoſe ſurface width is $\frac{8}{7}$ of its vertical depth; for this is the dimenſions when the rectangle *b* B E *e* is taken away.

Let A be the area of the ſection of any channel, w its width (when rectangular), and h its depth of water. Then what we have called its mean depth, or d, will be $\frac{A}{w+2h} = \frac{wh}{w+2h}$. Or if q expreſſes the ratio of the width to the depth of a rectangular bed; that is, if $q=\frac{w}{h}$, we have a very ſimple and ready expreſſion for the mean depth, either from the width or depth. For $d=\frac{w}{q+2}$, or $d=\frac{qh}{q+2}$.

Therefore, if the depth were infinite, and the width finite, we ſhould have $d=\frac{w}{2}$; or if the width be infinite, and the depth finite, we have $d=h$. And theſe are the limits of the values of d; and therefore, in rivers whoſe width is always great in compariſon of the depth, we may without much error take their real depth for their hydraulic mean depth. Hence we de- 71 Eſtimate of the expence of a running ſtream.

rive a rule of eaſy recollection, and which will at all times give us a very near eſtimate of the velocity and expence of a running ſtream, *viz.* that *the velocities are nearly as the ſquare roots of the depths*. We find this confirmed by many experiments of Michelotti.

Alſo, when we are allowed to ſuppoſe this ratio of the velocities and depths, that is, in a rectangular canal of great breadth and ſmall depth, we ſhall have the quantities d ſcharged nearly in the proportion of the cubes of the velocities. For the quantity diſcharged d is as the velocity and area jointly, that is, as the height and velocity jointly, becauſe when the width is the ſame the area is as the height. Therefore, we have $d \doteq hv$.— But, by the above remark, $h \doteq v^2$. Therefore, $d \doteq v^3$; and this is confirmed by the experiments of Boſſut, vol. ii. 236. Alſo, becauſe d is as vh, when w is conſtant, and by the above remark (allowable when w is very great in proportion to h) v is as $\sqrt{h}$, we have d as $h\sqrt{h}$, or $h^{\frac{3}{2}}$, or the ſquares of the diſcharges

pro-

Theory. proportional to the cubes of the heights in rectangular beds, and to their corresponding trapeziums.

Rules for finding the width and real depth, we can determine the dimensions of the bed, and we have $w = qd + 2d$, and $b = d + \frac{2d}{q}$.

2. If we know the area and mean depth, we can in like manner find the dimensions, that is, w and b; for $A = wb$, and $d = \frac{wb}{w+2b}$; therefore $w = \pm\sqrt{\frac{A^2}{4d^2} - 2A} + \frac{A}{2d}$.

3. If d be known, and one of the dimensions be given, we can find the other; for $d = \frac{wb}{w+2b}$ gives $w = \frac{2bd}{b-d}$, and $b = \frac{wd}{w-2d}$.

73 Mean depth, 4. If the velocity V and the slope S for a river in train be given, we can find the mean depth; for $V = \left(\frac{297}{\sqrt{S} - L\sqrt{S+1,6}} - 0,3\right)(\sqrt{d} - 0,1)$. Whence we deduce $\sqrt{d} - 0,1 = \frac{V}{\frac{297}{\sqrt{S} - L\sqrt{S+1,6}} - 0,3}$, and $\sqrt{d}$ = to this quantity + 0,1.

74 And slope. 5. We can deduce the slope which will put in train a river whose channel has given dimensions. We make $\frac{297(\sqrt{d} - 0,1)}{V + 0,3(\sqrt{d} - 0,1)} = \sqrt{S}$. This should be $= \sqrt{S} - L\sqrt{S+1,6}$, which we correct by trials, which will be exemplified when we apply these doctrines to practice.

Having thus established the relation between the different circumstances of the form of the channel to our general formula, we proceed to consider,

§ 2. *The gradations of velocity from the middle of the stream to the sides.*

The knowledge of this is necessary for understanding the regimen of a river; for it is the velocity of the filaments in contact with the bed which produces any change in it, and occasions any preference of one to another, in respect of regimen or stability. Did these circumstances not operate, the waters, true to the laws of hydraulics, and confined within the bounds which have been assigned them, would neither enlarge nor diminish the area of the channel. But this is all that we can promise of waters perfectly clear, running in pipes or hewn channels. But rivers, brooks, and smaller streams, carry along waters loaded with mud or sand, which they deposit wherever their velocity is checked; and they tear up, on the other hand, the materials of the channel wherever their velocity is sufficiently great. Nature, indeed, aims continually at an equilibrium, and works without ceasing to perpetuate her own performances, by establishing an equality of action and reaction, and proportioning the forms and direction of the motions to her agents, and to local circumstances. Her work is slow but unceasing; and what she cannot accomplish in a year she will do in a century. The beds of our rivers have acquired some stability, because they are the labour of ages; and it is to time that we owe those deep and wide valleys which receive and confine our rivers in channels, which are now consolidate, and with slopes which have been gradually moderated, so that they no longer either ravage our habitations or confound our boundaries. Art may imitate nature, and by directing her operations (which she still carries on according to her own imprescriptible laws) according to our views, we can hasten her progress, and accomplish our purpose, during the short period of human life. But we can do this only by studying the unalterable laws of mechanism. These are presented to us by spontaneous nature. Frequently we remain ignorant of their foundation: but it is not necessary for the prosperity of the subject that he have the talents of the senator; he can profit by the statute without understanding its grounds. It is so in the present instance. We have not as yet been able to infer the law of retardation observed in the filaments of a running stream from any found mechanical principle. The problem, however, does not appear beyond our powers, if we assume, with Sir Isaac Newton, that the velocity of any particular filament is the arithmetical mean between those of the filaments immediately adjoining. We may be assured, that the filament in the axis of an inclined cylindrical tube, of which the current is in train, moves the fastest, and that all those in the same circumference round it are moving with one velocity, and that the slowest are those which glide along the pipe. We may affirm the same thing of the motions in a semi-cylindrical inclined channel conveying an open stream. But even in these we have not yet demonstrated the ratio between the extreme velocities, nor in the different circles. This must be decided experimentally.

Theory. 75 Nature to be imitated in making artificial streams.

And here we are under great obligations to Mr de Buat. He has compared the velocity in the axis of a prodigious number and variety of streams, differing in size, form, slope, and velocity, and has computed in them all the mean velocity, by measuring the quantities of water discharged in a given time. His method of measuring the bottom velocity was simple and just. He threw in a gooseberry, as nearly as possible, of the same specific gravity with the water. It was carried along the bottom almost without touching it. See *Resistance of Fluids*, n° 67.

He discovered the following laws: 1. In small velocities the velocity in the axis is to that at the bottom in a ratio of considerable inequality. 2. This ratio diminishes as the velocity increases, and in very great velocities approaches to the ratio of equality. 3. What was most remarkable was, that neither the magnitude of the channel, nor its slope, had any influence in changing this proportion, while the mean velocity remained the same. Nay, though the stream ran on a channel covered with pebbles or coarse sand, no difference worth minding was to be observed from the velocity over a polished channel. 4. And if the velocity in the axis is constant, the velocity at the bottom is also constant, and is not affected by the depth of water or magnitude of the stream. In some experiments the depth was thrice the width, and in others the width was thrice the depth. This changed the proportion of the magnitude of the section

76 Laws of the velocities of different portions of the stream.

Theory. section to the magnitude of the rubbing part, but made no change on the ratio of the velocities. This is a thing which no theory could point out.

77 Mean velocity

Another moſt important fact was alſo the reſult of his obſervation, viz. that *the mean velocity in any pipe or open ſtream is the arithmetical mean between the velocity in the axis and the velocity at the ſides of a pipe or bottom of an open ſtream.* We have already obſerved, that the ratio of the velocity in the axis to the velocity at the bottom diminiſhed as the mean velocity increaſed. This variation he was enabled to expreſs in a very ſimple manner, ſo as to be eaſily remembered, and to enable us to tell any one of them by obſerving another.

If we take unity from the ſquare root of the ſuperficial velocity, expreſſed in inches, the ſquare of the remainder is the velocity at the bottom; and the mean velocity is the half ſum of theſe two. Thus, if the velocity in the middle of the ſtream be 25 inches per ſecond, its ſquare root is five; from which if we take unity, there remains four. The ſquare of this, or 16, is the velocity at the bottom, and $\frac{25+16}{2}$, or $20\frac{1}{2}$, is the mean velocity.

This is a very curious and moſt uſeful piece of information. The velocity in the middle of the ſtream is the eaſieſt meaſured of all, by any light ſmall body floating down it; and the mean velocity is the one which regulates the train, the diſcharge, the effect on machines, and all the moſt important conſequences.

78 Expreſſed by a formula.

We may expreſs this by a formula of moſt eaſy recollection. Let V be the mean velocity, v the velocity in the axis, and u the velocity at the bottom; we have $u = \overline{\sqrt{v}-1}^2$ and $V = \frac{v+u}{2}$.

Alſo $v = (\sqrt{V-\frac{1}{4}}+\frac{1}{2})^2$, and $v = (\sqrt{u}+1)^2$.

$V = (\sqrt{v}-\frac{1}{2})^2+\frac{1}{4}$, and $V = (\sqrt{u}+\frac{1}{2})^2+\frac{1}{4}$.

$u = (\sqrt{v}-1)^2$ and $u = (\sqrt{V-\frac{1}{4}}-\frac{1}{2})^2$. Theory.

Alſo $v-u = 2\sqrt{V-\frac{1}{4}}$ and $v - V$, $= V - u$, $= \sqrt{V-\frac{1}{4}}$: that is, the difference between theſe velocities increaſes in the ratio of the ſquare roots of the mean velocities diminiſhed by a ſmall conſtant quantity.

This may perhaps give the mathematicians ſome help in aſcertaining the law of degradation from the axis to the ſides. Thus, in a cylindrical pipe, we may conceive the current as conſiſting of an infinite number of cylindrical ſhells ſliding within each other like the draw tubes of a ſpy-glaſs. Each of theſe is in equilibrio, or as much accelerated by the one within it as it is retarded by the one without; therefore as the *momentum* of each diminiſhes in the proportion of its diameter (the thickneſs being ſuppoſed the ſame in all), the velocity of ſeparation moſt increaſe by a certain law from the ſides to the axis. The magnitude of the ſmall conſtant quantity here ſpoken of ſeems to fix this law.

79 Place of the mean velocity not diſcovered.

The place of the mean velocity could not be diſcovered with any preciſion. In moderate velocities it was not more than one-fourth or one-fifth of the depth diſtant from the bottom. In very great velocities it was ſenſibly higher, but never in the middle of the depth.

The knowledge of theſe three velocities is of great importance. The ſuperficial velocity is eaſily obſerved; hence the mean velocity is eaſily computed. This multiplied by the ſection gives the expence; and if we alſo meaſure the expanded border, and then obtain the mean depth (or $\sqrt{d}$), we can, by the formula of uniform motion, deduce the ſlope; or, knowing the ſlope, we can deduce any of the other circumſtances.

The following table of theſe three velocities will ſave the trouble of calculation in one of the moſt frequent queſtions of hydraulics.

Velocity in Inches.			Velocity in Inches.			Velocity in Inches.		
Surface.	Bottom.	Mean.	Surface.	Bottom.	Mean	Surface.	Bottom	Mean.
1	0,000	0,5	34	23,339	28,660	67	51,639	59,319
2	1,172	1,81	35	24,167	29,583	68	52,505	60,252
3	0,587	1,708	36	25,	30,5	69	53,392	61,196
4	1,	2,5	37	25,827	31,413	70	54,273	62,136
5	1,526	3,263	38	26,667	32,333	71	55,145	63,072
6	2,1	4,050	39	27,51	33,255	72	56,025	64,012
7	2,709	4,854	40	28,345	34,172	73	56,862	64,932
8	3,342	5,67	41	29,192	35,096	74	57,790	65,895
9	4,	6,5	42	30,030	36,015	75	58,687	66,843
10	4,674	7,337	43	30,880	36,940	76	59,568	67,784
11	5,369	8,184	44	31,742	37,871	77	60,451	68,725
12	6,071	9,036	45	32,581	38,790	78	61,340	69,670
13	6,786	9,893	46	33,432	39,716	79	62,209	70,605
14	7,513	10,756	47	34,293	40,646	80	63,107	71,553
15	8,254	11,622	48	35,151	41,570	81	64,	72,5
16	9,	12,5	49	36,	42,5	82	64,883	73,441
17	9,753	13,376	50	36,857	43,428	83	65,780	74,390
18	10,463	14,231	51	37,712	44,356	84	66,651	75,325
19	11,283	15,141	52	38,564	45,282	85	67,568	76,284
20	12,055	16,027	53	39,438	46,219	86	68,459	77,229
21	12,674	16,837	54	40,284	47,142	87	69,339	78,169
22	13,616	17,808	55	41,165	48,082	88	70,224	79,112
23	14,402	18,701	56	42,016	49,008	89	71,132	80,066
24	15,194	19,597	57	42,968	49,984	90	72,012	81,006
25	16,	20,5	58	43,771	50,886	91	72,915	81,957
26	16,802	21,401	59	44,636	51,818	92	73,788	82,894
27	17,606	22,303	60	45,509	52,754	93	74,719	83,859
28	18,421	23,210	61	46,276	53,688	94	75,603	84,801
29	19,228	24,114	62	47,259	54,629	95	76,51	85,755
30	20,044	25,022	63	48,136	55,568	96	77,370	86,685
31	20,857	25,924	64	49,	56,5	97	78,305	87,652
32	21,678	26,839	65	49,872	57,436	98	79,192	88,596
33	22,506	27,753	66	50,751	58,376	99	80,120	89,56
						100	81,	90,5

The knowledge of the velocity at the bottom is of the greateſt uſe for enabling us to judge of the action of the ſtream on its bed; and we ſhall now make ſome obſervations on this particular.

81 Operation of the ſtream on its bed.

Every kind of ſoil has a certain velocity conſiſtent with the ſtability of the channel. A greater velocity would enable the water to tear it up, and a ſmaller velocity would permit the depoſition of more moveable materials from above. It is not enough, then for the ſtability of a river, that the accelerating forces are ſo adjuſted to the ſize and figure of its channel that the current may be in train: it muſt alſo be in equilibrio with the tenacity of the channel.

We learn from obſervation, that a velocity of three inches per ſecond at the bottom will juſt begin to work upon fine clay fit for pottery, and however firm and compact it may be, it will tear it up. Yet no beds are more ſtable than clay when the velocities do not exceed this: for the water ſoon takes away the impalpable particles of the ſuperficial clay, leaving the particles of ſand ſticking by their lower half in the reſt of the clay, which they now protect, making a very permanent bottom, if the ſtream does not bring down gravel or coarſe ſand, which will rub off this very thin cruſt, and allow another layer to be worn off; a velocity of ſix inches will lift fine ſand; eight inches will lift ſand as coarſe as lintſeed; 12 inches will ſweep along fine gravel; 24 inches will roll along round pebbles an inch diameter; and it requires three feet per ſecond at the bottom to ſweep along ſhivery angular ſtones of the ſize of an egg.

82 How carried on,

The manner in which unwearied nature carries on ſome of theſe operations is curious, and deſerves to be noticed a little. All muſt recollect the narrow ridges or wrinkles which are left on the ſand by a temporary freſh or ſtream. They are obſerved to lie acroſs the ſtream, and each ridge conſiſts of a ſteep face AD, BF (fig. H.) which looks down the ſtream, and a gentler ſlope DB, FC, which connects this with the next ridge. As the ſtream comes over the firſt ſteep AD, it is directed almoſt perpendicularly againſt the point E immediately below D, and thus it gets hold of a particle of coarſe ſand, which it could not have detached from the reſt had it been moving parallel to the ſurface of it. It eaſily rolls it up the gentle ſlope EB; arrived there, the particle tumbles over the ridge, and lies cloſe at the bottom of it at F, where it is protected by the little eddy, which is formed in the very angle; other particles

Theory. ticles lying about E are treated in the same way, and, tumbling over the ridge B, cover the first particle, and now protect it effectually from any further disturbance. The same operation is going on at the bottom of each ridge. The brow or steep of the ridge gradually advances down the stream, and the whole set change their places, as represented by the dotted line *a d b f*; and after a certain time the particle which was deposited at F is found in an unprotected situation, as it was in E, and it now makes another step down the stream.

The Abbé Bossut found, that when the velocity of the stream was just sufficient for lifting the sand (and a small excess hindered this operation altogether) a ridge advanced about 20 feet in a day.

Since the current carries off the most moveable matters of the channel, it leaves the bottom covered with the remaining coarser sand, gravel, pebbles, and larger stones. To these are added many which come down the stream while it is more rapid, and also many which roll in from the sides as the banks wear away. All these form a bottom much more solid and immoveable than a bottom of the medium soil would have been. But this does not always maintain the channel in a permanent form; but frequently occasions great changes, by obliging the current, in the event of any sudden fresh or swell, to enlarge its bed, and even to change it altogether, by working to the right and to the left, since it cannot work downwards. It is generally from such accumulation of gravel and pebbles in the bottom of the bed that rivers change their channels.

It remains to ascertain, in absolute measures, the force which a current really exerts in attempting to drag along with it the materials of its channel; and which *will* produce this effect unless resisted by the inertia of these materials. It is therefore of practical importance to know this force.

Nor is it abstruse or difficult. For when a current is in train, the accelerating force is in equilibrio with the resistance, and is therefore its immediate measure. Now this accelerating force is precisely equal to the weight of the body of water in motion multiplied by the fraction which expresses the slope. The mean depth being equal to the quotient of the section divided by the border, the section is equal to the product of the mean depth multiplied by the border. Therefore, calling the border b, and the mean depth d, we have the section $= db$. The body of water in motion is therefore dbs (because s was the slant length of a part whose difference of elevation is 1), and the accelerating force is $dbs \times \frac{1}{s}$, or db. But if we would only consider this resistance as corresponding to an unit of the length of the channel, we must divide the quantity db by s, and the resistance is then $\frac{db}{s}$. And if we would consider the resistance only for an unit of the border, we must divide this expression by b; and thus this resistance (taking an inch for the unit) will be expressed for one square inch of the bed by the weight of a bulk of water which has a square inch for its base, and $\frac{d}{s}$ for its height. And lastly, if E be taken for any given superficial extent of the channel or bed, and F the obstruction which we consider as a sort of friction, we Theory. shall have $F = \frac{Ed}{s}$.

Thus, let it be required to determine in pounds the resistance or friction on a square yard of a channel whose current is in train, which is 10 feet wide, four feet deep, and has a slope of one foot in a mile. Here E is nine feet. Ten feet width and four feet depth give a section of 40 feet. The border is 18 feet. Therefore $d = \frac{40}{18} = 2,1111$, and s is 5280. Therefore the friction is the weight of a column of water whose base is nine feet, and height $\frac{2,1111}{5280}$, or nearly $3\frac{6}{15}$ ounces avoirdupois.

§ 3. *Settlement of the Beds of Rivers.*

83 Simplicity and wisdom displayed in the conduct of rivers.

He who looks with a careless eye at a map of the world, is apt to consider the rivers which ramble over its surface as a chance-medly disposition of the drainers which carry off the waters. But it will afford a most agreeable object to a considerate and contemplative mind, to take it up in this very simple light; and having considered the many ways in which the drenched surface might have been cleared of the superfluous waters, to attend particularly to the very way which nature has followed. In following the troubled waters of a mountain torrent, or the pure streams which trickle from their bases, till he sees them swallowed up in the ocean, and in attending to the many varieties in their motions, he will be delighted with observing how the simple laws of mechanism are made so fruitful in good consequences, both by modifying the motions of the waters themselves, and also by inducing new forms on the surface of the earth, fitted for re-acting on the waters, and producing these very modifications of their motions which render them so beneficial. The permanent beds of rivers are by no means fortuitous gutters hastily scooped out by dashing torrents; but both they and the valleys through which they flow are the patient but unceasing labours of nature, prompted by goodness and directed by wisdom.

Whether we trace a river from the torrents which collect the superfluous waters of heaven, or from the springs which discharge what would otherwise be condemned to perpetual inactivity, each feeder is but a little rill which could not ramble far from its scanty source among growing plants and absorbent earth, without being sucked up and evaporated, did it not meet with other rills in its course. When united they form a body of water still inconsiderable, but much more able, by its bulk, to overcome the little obstacles to its motion; and the rivulet then moves with greater speed, as we have now learned. At the same time, the surface exposed to evaporation and absorption is diminished by the union of the rills. Four equal rills have only the surface of two when united. Thus the portion which escapes arrestment, and travels downward, is continually increasing. This is a happy adjustment to the other operations of nature. Were it otherwise, the lower and more valuable countries would be loaded with the passing waters in addition to their own surplus rains, and the immediate neighbourhood of the sea would be almost covered by the drains of the interior

Theory. countries. But, fortunately, thofe paſſing waters occupy leſs room as they advance, and by this wiſe employment of the moſt ſimple means, not only are the ſuperfluous waters drained off from our fertile fields, but the drains themſelves become an uſeful part of the country by their magnitude. They become the habitation of a podigious number of fiſhes, which ſhare the Creater's bounty; and they become the means of mutual communication of all the bleſſings of cultivated ſociety. The vague ramblings of the rivers ſcatter them over the face of the country, and bring them to every door. It is not even an indifferent circumſtance, that they gather ſtrength to cut out deep beds for themſelves. By this means they cut open many ſprings. Without this, the produce of a heavy ſhower would make a ſwamp which would not dry up in many days. And it muſt be obſerved, that the ſame heat which is neceſſary for the vigorous growth of uſeful plants will produce a very copious evaporation. This muſt return in ſhowers much too copious for immediate vegetation, and the overplus would be deſtructive. Is it not pleaſant to contemplate this adjuſtment of the great operations of nature, ſo different from each other, that if chance alone directed the detail, it was almoſt an infinite odds that the earth would be uninhabitable?

84 Their effect on the countries through which they run.

But let us follow the waters in their operations, and note the face of the countries through which they flow: attending to the breadth, the depth, and the ſlope of the valleys, we ſhall be convinced that their preſent ſituation is extremely different from what it was in ancient days; and that the valleys themſelves are the works of the rivers, or at leaſt of waters which have deſcended from the heights, loaded with all the lighter matters which they were able to bring away with them. The rivers flow now in beds which have a conſiderable permanency; but this has been the work of ages. This has given ſtability, both by filling up and ſmoothing the valleys, and thus leſſening the changing cauſes, and alſo by hardening the beds themſelves, which are now covered with aquatic plants, and lined with the ſtones, gravel, and coarſer ſand, out of which all the lighter matters have been waſhed away.

The ſurface of the high grounds is undergoing a continual change; and the ground on which we now walk is by no means the ſame which was trodden by our remote anceſtors. The ſhowers from heaven carry down into the valleys, or ſweep along by the torrents, a part of the ſoil which covers the heights and ſteeps. The torrents carry this ſoil into the brooks, and theſe deliver part of it into the great rivers, and theſe diſcharge into the ſea this fertilizing fat of the earth, where it is ſwallowed up, and forever loſt for the purpoſes of vegetation. Thus the hillocks loſe of their height, the valleys are filled up, and the mountains are laid bare, and ſhow their naked precipices, which formerly were covered over with a fleſh and ſkin, but now look like the ſkeleton of this globe. The low countries, raiſed and nouriſhed for ſome time by the ſubſtance of the high lands, will go in their turn to be buried in the ocean; and then the earth, reduced to a dreary flat, will become an immenſe uninhabitable maſs. This cataſtrophe is far diſtant, becauſe this globe is in its youth, but it is not the leſs certain; and the united labours of the human race could not long protract the term.

But, in the mean time, we can trace a beneficent purpoſe, and a nice adjuſtment of ſeemingly remote circumſtances. The grounds near the ſources of all our rivers are indeed gradually ſtripped of their moſt fertile ingredients. But had they retained them for ages, the ſentient inhabitants of the earth, or at leaſt the nobler animals, with man at their head, would not have derived much advantage from it. The general laws of nature produce changes in our atmoſphere which muſt ever render theſe great elevations unfruitful. That genial warmth, which is equally neceſſary for the uſeful plant as for the animal which lives on it, is confined to the lower grounds. The earth, which on the top of mount Hæmus could only bring forth moſs and dittany, when brought into the gardens of Spalatro, produced pot-herbs ſo luxuriant, that Diocleſian told his colleague Maximian that he had more pleaſure in their cultivation than the Roman empire could confer. Thus nature not only provides us manure, but conveys it to our fields. She even keeps it ſafe in ſtore for us till it ſhall be wanted. The tracts of country which are but newly inhabited by man, ſuch as great part of America, and the newly diſcovered regions of Terra Auſtralis, are ſtill almoſt occupied by marſhes and lakes, or covered with impenetrable foreſts; and they would remain long enough in this ſtate, if population, continually increaſing, did not increaſe induſtry, and multiply the hands of cultivators along with their neceſſities. The Author of Nature was alone able to form the huge ridges of the mountains, to model the hillocks and the valleys, to mark out the courſes of the great rivers, and give the firſt trace to every rivulet; but has left to man the taſk of draining his own habitation and the fields which are to ſupport him, becauſe this is a taſk not beyond his powers. It was therefore of immenſe advantage to him that thoſe parts of the globe into which he has not yet penetrated ſhould remain covered with lakes, marſhes, and foreſts, which keep in ſtore the juice of the earth, which the influence of the air and the vivifying warmth of the ſun would have expended long ere now in uſeleſs vegetation, and which the rains of heaven would have ſwept into the ſea, had they not been thus protected by their ſituation or their cover. It is therefore the buſineſs of man to open up theſe mines of hoarded wealth and to thank the Author of all good, who has thus huſbanded them for his uſe, and left them as a rightful heritage for thoſe of after days.

Theory. 85 Beneficence diſplayed in the changes they produce.

The earth had not in the remote ages, as in our day, thoſe great canals, thoſe capacious voiders, always ready to drain off the rain waters (of which only part is abſorbed by the thirſty ground), and the pure waters of the ſprings from the foot of the hills. The rivers did not then exiſt, or were only torrents, whoſe waters, confined by the gullies and glens, are ſearching for a place to eſcape. Hence ariſe thoſe numerous lakes in the interior of great continents, of which there are ſtill remarkable relicks in North America, which in proceſs of time will diſappear, and become champaign countries. The moſt remote from the ſea, unable to contain its waters, finds an iſſue through ſome gorge of the hills, and pours over its ſuperfluous waters into a lower baſon, which, in its turn, diſcharges its contents into another, and the laſt of the chain delivers its waters by a river into the ocean. The communication was originally begun by a ſimple overflowing at the loweſt part of the margin. This made a torrent, which quickly

Theory. quickly deepened its bed; and this circumſtance increaſing its velocity, as we have ſeen, would extend this deepening backward to the lake, and draw off more of its waters. The work would go on rapidly at firſt, while earth and ſmall ſtones only reſiſted the labours of nature; but theſe being waſhed away, and the channel hollowed out to the firm rock on all ſides, the operation muſt go on very ſlowly, till the immenſe caſcade ſhall undermine what it cannot break off, and then a new diſcharge will commence, and a quantity of flat ground will emerge all round the lake. The torrent, in the mean time, makes its way down the country, and digs a canal, which may be called the firſt ſketch of a river, which will deepen and widen its bed continually. The waters of ſeveral baſons united, and running together in a great body, will (according to the principles we have eſtabliſhed) have a much greater velocity, with the ſame ſlope, than thoſe of the lakes in the interior parts of the continent; and the ſum of them all united in the baſon next the ſea, after having broken through its natural mound, will make a prodigious torrent, which will dig for itſelf a bed ſo much the deeper as it has more ſlope and a greater body of waters.

The formation of the firſt valleys, by cutting open many ſprings which were formerly concealed under ground, will add to the maſs of running waters, and contribute to drain off the waters of theſe baſons. In courſe of time many of them will diſappear, and flat valleys among the mountains and hills are the traces of their former exiſtence.

When nature thus traces out the courſes of future rivers, it is to be expected that thoſe ſtreams will moſt deepen their channels which in their approach to the ſea receive into their bed the greateſt quantities of rain and ſpring waters, and that towards the middle of the continent they will deepen their channels leſs. In theſe laſt ſituations the natural ſlope of the fields cauſes the rain-water, rills, and the little rivulets from the ſprings, to ſeek their way to the rivers. The ground can ſink only by the flattening of the hills and high grounds; and this muſt proceed with extreme ſlowneſs, becauſe it is only the gentle, though inceſſant, work of the rains and ſprings. But the rivers, increaſing in bulk and ſtrength, and of neceſſity flowing over every thing, form to themſelves capacious beds in a more yielding ſoil, and dig them even to the level of the ocean.

86 Beds of rivers not formed in one inclined plane.

The beds of rivers by no means form themſelves in one inclined plane. If we ſhould ſuppoſe a canal AB (fig. 12.) perfectly ſtraight and horizontal at B, where it joins with the ſea, this canal would really be an inclined channel of greater and greater ſlope as it is farther from B. This is evident; becauſe gravity is directed towards the centre of the earth, and the angle CAB contained between the channel and the plumb-line at A is ſmaller than the ſimilar angle CDB; and conſequently the inclination to the horizon is greater in A than in D. Such a canal therefore would make the bed of a river; and ſome have thought that this was the real form of nature's work; but the ſuppoſition is a whim, and it is falſe. No river has a ſlope at all approaching to this. It would be 8 inches declivity in the mile next the ocean, 24 inches in the ſecond mile, 40 inches in the third, and ſo on in the duplicate ratio (for the whole elevation) of the diſtances from the ſea. Such a river would quickly tear up its bed in the mountains (were there any grounds high enough to receive it), and, except its firſt caſcade, would ſoon acquire a more gentle ſlope. But the fact is, and it is the reſult of the impreſcriptible laws of nature, that the continued track of a river is a ſucceſſion of inclined channels, whoſe ſlope diminiſhes by ſteps as the river approaches to the ſea. It is not enough to ſay that this reſults from the natural ſlope of the countries through which it flows, which we obſerve to increaſe in declivity as we go to the interior parts of the continent. Were it otherwiſe, the equilibrium to which nature aims in all her operations would ſtill produce the gradual diminution of the ſlope of rivers. Without it they could not be in a permanent train. Theory.

87 How the permanent courſe of a river is eſtabliſhed.

That we may more eaſily form a notion of the manner in which the permanent courſe of a river is eſtabliſhed, let us ſuppoſe a ſtream or rivulet *s a* (fig. 13.) far up the country, make its way through a ſoil perfectly uniform to the ſea, taking the courſe *s a b c d e f*, and receiving the *permanent additions* of the ſtreams *g a*, *h b*, *i c*, *k d*, *l e*, and that its velocity and ſlope in all its parts are ſo ſuited to the tenacity of the ſoil and magnitude of its ſection, that neither do its waters during the annual freſhes tear up its banks or deepen its bed, nor do they bring down from the high lands materials which they depoſit in the channel in times of ſmaller velocity. Such a river may be ſaid to be in a *permanent ſtate*, to be in *conſervation*, or to have *ſtability*. Let us call this ſtate of a river its REGIMEN, denoting by the word the proper adjuſtment of the velocity of the ſtream to the tenacity of the channel. The velocity of its regimen muſt be the ſame throughout, becauſe it is this which regulates its action on the bottom, which is the ſame from its head to the ſea. That its bed may have ſtability, the mean velocity of the current muſt be conſtant, notwithſtanding the inequality of diſcharge, through its different ſections by the brooks which it receives in its courſe, and notwithſtanding the augmentation of its ſection as it approaches the ſea.

On the other hand, it behoved this exact regimen to commence at the mouth of the river, by the working of the whole body of the river, in concert with the waters of the ocean, which always keep within the ſame limits, and make the ultimate level invariable. This working will begin to dig the bed, giving it as little breadth as poſſible: for this working conſiſts chiefly in the efforts of falls and rapid ſtreams, which ariſe of themſelves in every channel which has too much ſlope. The bottom deepens, and the ſides remain very ſteep, till they are undermined and crumble down; and being then diluted in the water, they are carried down the ſtream, and depoſited where the ocean checks its ſpeed. The banks crumble down anew, the valley or hollow forms; but the ſection, always confined to its bottom, cannot acquire a great breadth, and it retains a good deal of the form of the trapezium formerly mentioned. In this manner does the regimen begin to be eſtabliſhed from *f* to *e*.

With reſpect to the next part *d e*, the diſcharge or produce is diminiſhed by the want of the brook *l e*. It muſt take a ſimilar form, but its area will be diminiſhed, in order that its velocity may be the ſame; and its mean depth *d* being leſs than in the portion *e f* below, the ſlope muſt be greater. Without theſe conditions we could not have the uniform velocity, which the aſſumed

Theory. permanency in an uniform ſoil neceſſarily ſuppoſe. Reaſoning after the ſame manner for all the portions [illegible], we ſee that the regimen will be neceſſarily eſtabliſhed in them, and that the ſlope neceſſary for the purpoſe will be greater as we approach the river's head. The vertical ſection or profile of the courſe of the river [illegible] will therefore reſemble the line SABCDLF which is ſketched below, having its different parts variouſly inclined to the horizontal line HL.

88 Such is the proceſs of nature to be obſerved in every river on the ſurface of the globe. It long appeared a kind of puzzle to the theoriſts; and it was this obſervation of the increaſing, or at leaſt this continued velocity with ſmaller ſlope, as the rivers increaſed by the addition of their tributary ſtreams, which caſued Guglielmini to have recourſe to his new principle, the energy of deep waters. We have now ſeen in what this energy conſiſts. It is only a greater quantity of motion remaining in the middle of a great ſtream of water after a quantity has been retarded by the ſides and bottom; and we ſee clearly, that ſince the addition of a new and perhaps an equal ſtream does not occupy a bed of double furface, the proportion of the retardation to the remaining motion muſt continually diminiſh as a river increaſes by the addition of new ſtreams. If therefore the ſlope were not diminiſhed, the regimen would be deſtroyed, and the river would dig up its channel. We have a full confirmation of this in the many works which have been executed on the Po, which runs with rapidity through a rich and yielding ſoil. About the year 1600, the waters of the Panaro, a very conſiderable river, were added to the Po Grande; and although it brings along with it in its freſhes a vaſt quantity of ſand and mud, it has greatly deepened the whole Tronco di Venezia from the confluence to the ſea. This point was clearly aſcertained by Manfredi about the 1720, when the inhabitants of the valleys adjacent were alarmed by the project of bringing in the waters of the Rheno, which then ran through the Ferrareſe. Their fears were overcome, and the Po Grande continues to deepen its channel every day with a prodigious advantage to the navigations; and there are ſeveral extenſive marſhes which now drain off by it, after having been for ages under water: and it is to be particularly remarked, that the Rheno is the fouleſt river in its freſhes of any in that country. We inſert this remark, becauſe it may be of great practical utility, as pointing out a method of preſerving and even improving the depth of rivers or drains in flat countries, which is not obvious, and rather appears improper: but it is ſtrictly conformable to a true theory, and to the operations of nature, which never fails to adjuſt every thing ſo as to bring about an equilibrium. Whatever the declivity of the country may have been originally, the regimen begins to be ſettled at the mouths of the rivers, and the ſlopes are diminiſhed in ſucceſſion as we recede from the coaſt. The original ſlopes inland may have been much greater; but they will (when buſy nature has completed her work) be left ſomewhat, and only ſo much greater, that the velocity may be the ſame notwithſtanding the diminution of the ſection and mean depth.

90 Effect of freſhes. Freſhes will diſturb this methodical progreſs relative only to the ſucceſſive permanent additions; but their effects chiefly accelerate the deepening of the bed, and the diminution of the ſlope, by augmenting the velocity during their continuance. But when the regimen of the permanent additions is once eſtabliſhed, the freſhes tend chiefly to widen the bed, without greatly deepening it: for the aquatic plants, which have been growing and thriving during the peaceable ſtate of the river, are now laid along, but not ſwept away, by the freſhes and protect the bottom from their attacks; and the ſtones and gravel, which muſt have been left bare in a courſe of years, working on the ſoil, will alſo collect in the bottom, and greatly augment its power of reſiſtance; and even if the floods ſhould have deepened the bottom ſome ſmall matter, ſome mud will be depoſited as the velocity of the freſhes diminiſhes, and this will remain till the next flood.

We have ſuppoſed the ſoil uniform through the whole courſe: This ſeldom happens; therefore the circumſtances which inſure permanency, or the regimen of a river, may be very different in its different parts and in different rivers. We may ſay in general, that the farther that the regimen has advanced up the ſtream in any river, the more ſlowly will it convey its waters to the ſea.

There are ſome general circumſtances in the motion of rivers which it will be proper to take notice of juſt now, that they may not interrupt our more minute examination of their mechaniſm, and their explanations will then occur of themſelves as corollaries of the propoſitions which we ſhall endeavour to demonſtrate.

91 In narrow valleys rivers adhere to the ſteepeſt hills. In a valley of ſmall width the river always occupies the loweſt part of it; and it is obſerved, that it is ſeldom in the middle of the valley, and is neareſt to that ſide on which the ſlope from the higher grounds is ſteepeſt, and this without regard to the line of its courſe. The river generally adheres to the ſteepeſt hills, whether they advance into the plain or retire from it. This general feature may be obſerved over the whole globe. It is divided into compartments by great ranges of mountains; and it may be obſerved, that the great rivers hold their courſe not very far from them, and that their chief feeders come from the other ſide. In every compartment there is a ſwell of the low country at a diſtance from the bounding ridge of mountains; and on the ſummit of this ſwell the principal feeders of the great river have their ſources.

The name *valley* is given with leſs propriety to theſe immenſe regions, and is more applicable to tracks of champaign land which the eye can take in at one view. Even here we may obſerve a reſemblance. It is not always in the very loweſt part of this valley that the river has its bed; although the waters of the river flow in a channel below its immediate banks, theſe banks are frequently higher than the grounds at the foot of the hills. This is very diſtinctly ſeen in Lower Egypt, by means of the canals which are carried backward from the Nile for accelerating its fertilizing inundations. When the caliſhes are opened to admit the waters, it is always obſerved that the diſtricts moſt remote are the firſt covered, and it is ſeveral days before the immediately adjoining fields partake of the bleſſing. This is a conſequence of that general operation of nature by which the valleys are formed. The river in its floods is loaded with mud, which it retains as long as it rolls rapidly along its limited bed, tumbling its waters over and over, and taking up in every ſpot as much as it

Theory. it depoſits: but as ſoon as it overflows its banks, the very enlargement of its ſection diminiſhes the velocity of the water; and it may be obſerved ſtill running in the track of its bed with great velocity, while the waters on each ſide are ſtagnant at a very ſmall diſtance: Therefore the water, on getting over the banks, muſt depoſit the heavieſt, the firmeſt, and even the greateſt part of its burden, and muſt become gradually clearer as it approaches the hills. Thus a gentle ſlope is given to the valley in a direction which is the reverſe of what one would expect. It is, however, almoſt always the caſe in wide valleys, eſpecially if the great river comes through a ſoft country. The banks of the brooks and ditches are obſerved to be deeper as they approach the river, and the merely ſuperficial drains run backwards from it.

92 The bed of rivers is enlarged near the ſea,

We have already obſerved, that the enlargement of the bed of a river, in its approach to the ſea, is not in proportion to the increaſe of its waters. This would be the caſe even if the velocity continued the ſame: and therefore, ſince the velocity even increaſes, in conſequence of the greater energy of a large body of water, which we now underſtand diſtinctly, a ſtill ſmaller bed is ſufficient for conveying all the water to the ſea.

93 The water being checked by the tides of the ocean.

This general law is broken, however, in the immediate neighbourhood of the ſea; becauſe in this ſituation the velocity of the water is checked by the paſſing flood-tides of the ocean. As the whole waters muſt ſtill be diſcharged, they require a larger bed, and the enlargement will be chiefly in width. The ſand and mud are depoſited when the motion is retarded. The depth of the mouth of the channel is therefore diminiſhed. It muſt therefore become wider. If this be done on a coaſt expoſed to the force of a regular tide, which carries the waters of the ocean acroſs the mouth of the river, this regular enlargement of the mouth will be the only conſequence, and it will generally widen till it waſhes the foot of the adjoining hills; but if there be no tide in the ſea, or a tide which does not ſet acroſs the mouth of the river, the ſands muſt be depoſited at the ſides of the opening, and become additions to the ſhore, lengthening the mouth of the channel. In this ſheltered ſituation, every trivial circumſtance will cauſe the river to work more on particular parts of the bottom, and deepen the channel there. This keeps the mud ſuſpended in ſuch parts of the channel, and it is not depoſited till the ſtream has ſhot farther out into the ſea. It is depoſited on the ſides of thoſe deeper parts of the channel, and increaſes the velocity in them, and thus ſtill farther protracts the depoſition. Rivers ſo ſituated will not only lengthen their channels, but will divide them, and produce iſlands at their mouths. A buſh, a tree torn up by the roots by a mountain torrent, and floated down the ſtream, will thus inevitably produce an iſland; and rivers in which this is common will be continually ſhifting their mouths. The Miſſiſſippi is a moſt remarkable inſtance of this. It has a long courſe through a rich ſoil, and diſembogues itſelf into the Bay of Mexico, in a place where there is no *paſſing tide*, as may be ſeen by comparing the hours of high water in different places. No river that we know carries down its ſtream ſuch numbers of rooted-up trees: they frequently interrupt the navigation, and render it always dangerous in the night-time. This river is ſo beſet with flats and ſhifting ſands at its mouth, that the moſt experienced pilots are puzzled; and it has protruded its channel above 50 miles in the ſhort period that we have known it. The diſcharge of the Danube is very ſimilar: ſo is that of the Nile; for it is diſcharged into a ſtill corner of the Mediterranean. It may now be ſaid to have acquired conſiderable permanency; but much of this is owing to human induſtry, which ſtrips it as much as poſſible of its ſubſideable matter. The Ganges too is in a ſituation pretty ſimilar, and exhibits ſimilar phenomena. The Maragnon might be noticed as an exception; but it is not an exception. It has flowed very far in a level bed, and its waters come pretty clear to Para; but beſides, there is a ſtrong tranſverſe tide, or rather current, at its mouth, ſetting to the ſouth-eaſt both during flood and ebb. The mouth of the Po is perhaps the moſt remarkable of any on the ſurface of this globe, and exhibits appearances extremely ſingular. Its diſcharge is into a requeſtered corner of the Adriatic. Though there be a more remarkable tide in this gulph than in any part of the Mediterranean, it is ſtill but trifling, and it either ſets directly in upon the mouth of the river, or retires ſtraight away from it. The river has many mouths, and they ſhift prodigiouſly. There has been a general increaſe of the land very remarkable. The marſhes where Venice now ſtands were, in the Auguſtan age, everywhere penetrable by the fiſhing boats, and in the 5th century could only bear a few miſerable huts; now they are covered with crowds of ſtately buildings. Ravenna, ſituated on the ſouthernmoſt mouth of the Po, was, in the Auguſtan age, at the extremity of a ſwamp, and the road to it was along the top of an artificial mound, made by Auguſtus at immenſe expence. It was, however, a fine city, containing extenſive docks, arſenals, and other maſſy buildings, being the great military port of the empire, where Auguſtus laid up his great ſhips of war. In the Gothic times it became almoſt the capital of the Weſtern empire, and was the ſeat of government and of luxury. It muſt, therefore, be ſuppoſed to have every accommodation of opulence, and we cannot doubt of its having paved ſtreets, wharfs, &c.; ſo that its wealthy inhabitants were at leaſt walking dryfooted from houſe to houſe. But now it is an Italian mile from the ſea, and ſurrounded with vineyards and cultivated fields, and is acceſſible in every direction. All this muſt have been formed by depoſitions from the Po, flowing through Lombardy loaded with the ſpoils of the Alps, which were here arreſted by the reeds and bulruſhes of the marſh. Theſe things are in common courſe; but when wells are dug, we come to the pavements of the ancient city, and theſe pavements are all on one exact level, and they *are eight feet below the ſurface of the ſea at low water*. This cannot be aſcribed to the ſubſiding of the ancient city. This would be irregular, and greateſt among the heavy buildings. The tomb of Theodoric remains, and the pavement round it is on a level with all the others. The lower ſtory is always full of water; ſo is the lower ſtory of the cathedral to the depth of three feet. The ornaments of both theſe buildings leave no room to doubt that they were formerly dry; and ſuch a building as the cathedral could not ſink without crumbling into pieces.

Theory.

It is by no means eaſy to account for all this. The depoſitions

Theory.

depoſitions of the Po and other rivers muſt raiſe the ground; and yet the rivers muſt ſtill flow over all. We muſt conclude that the ſurface of the Adriatic is by no means level, and that it ſlopes like a river from the Lagoon of Venice to the eaſtward. In all probability it even ſlopes conſiderably outwards from the ſhore. This will not hinder the alternations of ebb and flow tide, as will be ſhown in its proper place. The whole ſhores of this gulph exhibit much uncommon appearance.

94 Rivers are convex athwart the ſtream, and the cauſe of it.

The laſt general obſervation which we ſhall make in this place is, that the ſurface of a river is not flat, conſidered athwart the ſtream, but convex: this is owing to its motion. Suppoſe a canal of ſtagnant water; its ſurface would be a perfect level. But ſuppoſe it poſſible by any means to give the middle waters a motion in the direction of its length, they muſt drag along with them the waters immediately contiguous. Theſe will move leſs ſwiftly, and will in like manner drag the waters without them; and thus the water at the ſides being abſtracted, the depth muſt be leſs, and the general ſurface muſt be convex acroſs. The fact in a running ſtream is ſimilar to this; the ſide waters are withheld by the ſides, and every filament is moving more ſlowly than the one next it towards the middle of the river, but faſter than the adjoining filament on the land ſide. This alone muſt produce a convexity of ſurface. But beſides this, it is demonſtrable that the preſſure of a running ſtream is diminiſhed by its motion, and the diminution is proportional to the height which would produce the velocity with which it is gliding paſt the adjoining filament. This convexity muſt in all caſes be very ſmall. Few rivers have the velocity nearly equal to eight feet *per* ſecond, and this requires a height of one foot only. An author quoted by Mr Buffon ſays, that he has obſerved on the river Aveiron an elevation of three feet in the middle during floods; but we ſuſpect ſome error in the obſervation.

§ 4. *Of the Windings of Rivers.*

95 Winding courſe of rivers, how formed.

Rivers are ſeldom ſtraight in their courſe. Formed by the hand of nature, they are accommodated to every change of circumſtance. They wind around what they cannot get over, and work their way to either ſide according as the reſiſtance of the oppoſite bank makes a ſtraight courſe more difficult; and this ſeemingly fortuitous rambling diſtributes them more uniformly over the ſurface of a country, and makes them every where more at hand, to receive the numberleſs rills and rivulets which collect the waters of our ſprings and the ſuperfluities of our ſhowers, and to comfort our habitations with the many advantages which cultivation and ſociety can derive from their preſence. In their feeble beginnings the ſmalleſt inequality of ſlope or conſiſtency is enough to turn them aſide and make them ramble through every field, giving drink to our herds and fertility to our ſoil. The more we follow nature into the minutiæ of her operations, the more muſt we admire the inexhauſtible fertility of her reſources, and the ſimplicity of the means by which ſhe produces the moſt important and beneficial effects. By thus twiſting the courſe of our rivers into 10,000 ſhapes, ſhe keeps them long amidſt our fields, and thus compenſates for the declivity of the ſurface, which otherwiſe would tumble them with great rapidity into the ocean, loaded with the beſt and richeſt of our ſoil. Without this, the ſhowers of heaven would have little influence in ſupplying the waſte of inceſſant evaporation. But as things are, the rains are kept ſlowly trickling along the ſloping ſides of our hills and ſteeps, winding round every clod, nay every plant, which lengthens their courſe, diminiſhes their ſlope, checks their ſpeed, and thus prevents them from quickly bruſhing off from every part of the ſurface the lighteſt and beſt of the ſoil. The flatteſt of our holm lands would be too ſteep, and the rivers would ſhoot along through our fineſt meadows, hurrying every thing away with them, and would be unfit for the purpoſes of inland conveyance, if the inequalities of ſoil did not make them change this headlong courſe for the more beautiful meanders which we obſerve in the courſe of the ſmall rivers winding through our meadows. Thoſe rivers are in general the ſtraighteſt in their courſe which are the moſt rapid, and which roll along the greateſt bodies of water; ſuch are the Rhone, the Po, the Danube. The ſmaller rivers continue more devious in their progreſs, till they approach the ſea, and have gathered ſtrength from all their tributary ſtreams.

96 What nature has left for man to perform.

Every thing aims at an equilibrium, and this directs even the ramblings of rivers. It is of importance to underſtand the relation between the force of a river and the reſiſtance which the ſoil oppoſes to thoſe deviations from a rectilineal courſe; for it may frequently happen that the general procedure of nature may be inconſiſtent with our local purpoſes. Man was ſet down on this globe, and the taſk of cultivating it was given him by nature, and his chief enjoyment ſeems to be to ſtruggle with the elements. He muſt not find things to his mind, but he muſt mould them to his own fancy. Yet even this ſeeming anomaly is one of nature's moſt beneficent laws; and his exertions muſt ſtill be made in conformity with the general train of the operations of mechanical nature: and when we have any work to undertake relative to the courſe of rivers, we muſt be careful not to thwart their general rules, otherwiſe we ſhall be ſooner or later puniſhed for their infraction. Things will be brought back to their former ſtate, if our operations are inconſiſtent with that equilibrium which is conſtantly aimed at, or ſome new ſtate of things which is equivalent will be ſoon induced. If a well regulated river has been improperly deepened in ſome place, to anſwer ſome particular purpoſe of our own, or if its breadth has been improperly augmented, we ſhall ſoon ſee a depoſition of mud or ſand choak up our fancied improvements; becauſe, as we have enlarged the ſection without increaſing the ſlope or the ſupply, the velocity muſt diminiſh, and floating matters muſt be depoſited.

It is true, we frequently ſee permanent channels where the forms are extremely different from that which the waters would dig for themſelves in an uniform ſoil, and which approaches a good deal to the trapezium deſcribed formerly. We ſee a greater breadth frequently compenſate for a want of depth; but all ſuch deviations are a ſort of conſtraint, or rather are indications of inequality of ſoil. Such irregular forms are the works of nature; and if they are permanent, the equilibrium is obtained. Commonly the bottom is harder than the ſides, conſiſting of the coarſeſt of the ſand and of gravel; and therefore the neceſſary ſection can be obtained only by increaſing the width. We

are

Theory. are accuſtomed to attend chiefly to the appearances which prognoſticate miſchief, and we interpret the appearances of a permanent bed in the ſame way, and frequently form very falſe judgments. When we ſee one bank low and flat, and the other high and abrupt, we ſuppoſe that the waters are paſſing along the firſt in peace, and with a gentle ſtream, but that they are rapid on the other ſide, and are tearing away the bank; but it is juſt the contrary. The bed being permanent, things are in equilibrio, and each bank is of a form juſt competent to that equilibrium. If the ſoil on both ſides be uniform, the ſtream is moſt rapid on that ſide where the bank is low and flat, for in no other form would it withſtand the action of the ſtream; and it has been worn away till its flatneſs compenſates for the greater force of the ſtream. The ſtream on the other ſide muſt be more gentle, otherwiſe the bank could not remain abrupt. In ſhort, in a ſtate of permanency, the velocity of the ſtream and form of the bank are juſt ſuited to each other. It is quite otherwiſe before the river has acquired its proper regimen.

97 Neceſſity of attending to nature in regulating the courſe of rivers.

A careful conſideration therefore of the general features of rivers which have ſettled their regimen, is of uſe for informing us concerning their internal motions, and directing us to the moſt effectual methods of regulating their courſe.

We have already ſaid that perpendicular brims are inconſiſtent with ſtability. A ſimicircular ſection is the form which would produce the quickeſt train of a river whoſe expence and ſlope are given; but the banks at B and D (fig. 14.) would crumble in, and lie at the bottom, where their horizontal ſurface would ſecure them from farther change. The bed will acquire the form G *c* F, of equal ſection, but greater width, and with brims leſs ſhelving. The proportion of the velocities at A and *c* may be the ſame with that of the velocities at A and C; but the velocity at G and F will be leſs than it was formerly at B, C, or D; and the velocity in any intermediate point E, being ſomewhat between thoſe at F and *c*, muſt be leſs than it was in any intermediate point of the ſemicircular bed. The velocities will therefore decreaſe along the border from *c* towards G and F, and the ſteepneſs of the border will augment at the ſame time, till, in every point of the new border G*c*F, theſe two circumſtances will be ſo adjuſted that the neceſſary equilibrium is eſtabliſhed.

The ſame thing muſt happen in our trapezium. The ſlope of the brims may be exact, and will be retained; it will, however, be too great anywhere below, where the velocity is greater, and the ſides will be worn away till the banks are undermined and crumble down, and the river will maintain its ſection by increaſing its width. In ſhort, no border made up of ſtraight lines is conſiſtent with that gradation of velocity which will take place whenever we depart from a ſemicircular form. And we accordingly ſee, that in all natural channels the ſection has a curvilineal border, with the ſlope increaſing gradually from the bottom to the brim.

Theſe obſervations will enable us to underſtand how nature operates when the inequality of ſurface or of tenacity obliges the current to change its direction, and the river forms an elbow.

Suppoſing always that the diſcharge continues the ſame, and that the mean velocity is either preſerved or reſtored, the following conditions are neceſſary for a permanent regimen. Theory.

98 Conditions neceſſary for a permanent regimen.

1. The depth of water muſt be greater in the elbow than anywhere elſe.

2. The main ſtream, after having ſtruck the concave bank, muſt be reflected in an equal angle, and muſt then be in the direction of the next reach of the river.

3. The angle of incidence muſt be proportioned to the tenacity of the ſoil.

4. There muſt be in the elbow an increaſe of ſlope, or of head of water, capable of overcoming the reſiſtance occaſioned by the elbow.

The reaſonableneſs, at leaſt, of theſe conditions will appear from the following conſiderations.

99 Reaſonableneſs of theſe conditions.

1. It is certain that force is expended in producing this change of direction in a channel which by ſuppoſition diminiſhes the current. The diminution ariſing from any cauſe which can be compared with friction muſt be greater when the ſtream is directed againſt one of the banks. It may be very difficult to ſtate the proportion, and it would occupy too much of our time to attempt it; but it is ſufficient that we be convinced that the retardation is greater in this caſe. We ſee no cauſe to increaſe the mean velocity in the elbow, and we muſt therefore conclude that it is diminiſhed. But we are ſuppoſing that the diſcharge continues the ſame; the ſection muſt therefore augment, or the channel increaſe its tranſverſe dimenſions. The only queſtion is, In what manner it does this, and what change of form does it affect, and what form is competent to the final equilibrium and the conſequent permanency of the bed? Here there is much room for conjecture. Mr Buat reaſons as follows. If we ſuppoſe that the points B and C (fig. 15.) continue on a level, and that the points H and I at the beginning of the next reach are alſo on a level, it is an inevitable conſequence that the ſlope along CMI muſt be greater than along BEH, becauſe the depreſſion of H below B is equal to that of I below C, and BEH is longer than CMI. Therefore the velocity along the convex bank CMI muſt be greater than along BEH. There may even be a ſtagnation and an eddy in the contrary direction along the concave bank. Therefore, if the form of the ſection were the ſame as up the ſtream, the ſides could not ſtand on the convex bank. When therefore the ſection has attained a permanent form, and the banks are again in equilibrio with the action of the current, the convex bank muſt be much flatter than the concave. If the water is really ſtill on the concave bank, that bank will be abſolutely perpendicular; nay, may overhang.—Accordingly this ſtate of things is matter of daily obſervation, and juſtifies our reaſoning, and entitles us to ſay, that this is the nature of the internal motion of the filaments which we cannot diſtinctly obſerve. The water moves moſt rapidly along the convex bank, and the thread of the ſtream is neareſt to this ſide. Reaſoning in this way, the ſection, which we may ſuppoſe to have been originally of the form M *b a* E (fig. 16.) aſſumes the ſhape MBAE.

2. Without preſuming to know the mechaniſm of the internal motions of fluids, we know that ſuperficial waves are reflected preciſely as if they were elaſtic bodies, making the angles of incidence and reflection equal. In as far therefore as the ſuperficial wave is concerned in the operation, Mr Buat's ſecond poſition is juſt.

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Theory. The permanency of the next reach requires that its axis shall be in the direction of the line EP which makes the angle CEP=FEN. If the next reach has the direction EQ, MR, the wave reflected in the line ES will work on the bank at S, and will be reflected in the line SF, and work again on the opposite bank at T. We know that the effect of the superficial motion is great, and that it is the principal agent in deepening the canals of canals. So far therefore Mr Buat is right. We cannot say with any precision or confidence how the action of the under filaments are modified; but we know no reason for not extending to the under filaments what appears so probable with respect to the surface water.

3. The third position is no less evident. We do not know the mode of action of the water on the bank; but our general notions on this subject, confirmed by common experience, tell us that the more obliquely a stream of water beats on any bank, the less it tends to undermine it or wash it away. A stiff and cohesive soil therefore will suffer no more from being almost perpendicularly buffeted by a stream than a friable sand would suffer from water gliding along its face. Mr Buat thinks, from experience, that a clay bank is not sensibly affected till the angle FEB is about 36 degrees.

4. Since there are causes of retardation, and we still suppose that the discharge is kept up, and that the mean velocity, which had been diminished by the enlargement of the section, is again restored, we must grant that there is provided, in the mechanism of these motions, an accelerating force adequate to this effect. There can be no accelerating force in an open stream but the superficial slope. In the present case it is undoubtedly so; because by the deepening of the bottom where there is an elbow in the stream, we have of necessity a counter slope. Now, all this head of water, which must produce the augmentation of velocity in that part of the stream which ranges round the convex bank, will arise from the check which the water gets from the concave bank. This occasions a gorge or swell up the stream, enlarges a little the section at BVC; and this, by the principle of uniform motion, will augment all the velocities, deepen the channel, and put every thing again into its train as soon as the water gets into the next reach. The water at the bottom of this bason has very little motion, but it defends the bottom by this very circumstance.

159 Remarks on these conditions, and the reasons of them.

Such are the notions which Mr de Buat entertains of this part of the mechanism of running waters. We cannot say that they are very satisfactory, and they are very opposite to the opinions commonly entertained on the subject. Most persons think that the motion is most rapid and turbulent on the side of the concave bank, and that it is owing to this that the bank is worn away till it become perpendicular, and that the opposite bank is flat, because it has not been gnawed away in this manner. With respect to this general view of the matter, these persons may be in the right; and when a stream is turned into a crooked and yielding channel for the first time, this is its manner of action. But Mr Buat's aim is to investigate the circumstances which obtain in the case of a regimen; and in this view he is undoubtedly right as to the facts, though his mode of accounting for these facts may be erroneous. And as this is the only useful view to be taken of the subject, it ought chiefly to be attended to in all our attempts to procure stability to the bed of a river, without the expensive helps of masonry, &c. If we attempt to secure permanency by deepening on the inside of the elbow, our bank will undoubtedly crumble down, diminish the passage, and occasion a more violent action on the hollow bank. The most effectual mean of security is to enlarge the section: and if we do this on the inside bank, we must do it by widening the stream very much, that we may give a very sloping bank. Our attention is commonly drawn to it when the hollow bank is giving way, and with a view to stop the ravages of the stream. Things are not now in a state of permanency, but nature is working in her own way to bring it about. This may not suit *our* purpose, and we must thwart her. The phenomena which we then observe are frequently very unlike to those described in the preceding paragraphs. We see a violent tumbling motion in the stream towards the hollow bank. We see an evident accumulation of water on that side, and the point B is frequently higher than C. This regorging of the water extends to some distance, and is of itself a cause of greater velocity, and contributes, like a head of stagnant water, to force the stream through the bend, and to deepen the bottom. This is clearly the case when the velocity is excessive, and the hollow bank able to abide the shock. In this situation the water thus heaped up escapes where it best can; and as the water, obstructed by an obstacle put in its way, escapes by the sides, and there has its velocity increased, so here the water gorged up against the hollow bank swells over towards the opposite side, and passes round the convex bank with an increased velocity. It depends much on the adjustment between the velocity and consequent accumulation, and the breadth of the stream and the angle of the elbow, whether this augmentation of velocity shall reach the convex bank; and we sometimes see the motion very languid in that place, and even depositions of mud and sand are made there. The whole phenomena are too complicated to be accurately described in general terms, even in the case of perfect regimen: for this regimen is relative to the consistence of the channel; and when this is very great, the motions may be most violent in every quarter. But the preceding observations are of importance, because they relate to ordinary cases and to ordinary channels.

Theory.

It is evident, from Mr Buat's second position, that the proper form of an elbow depends on the breadth of the stream as well as on the radius of curvature, and that every angle of elbow will require a certain proportion between the width of the river and the radius of the sweep. Mr Buat gives rules and formulæ for all these purposes, and shows that in one sweep there may be more than one reflection or rebound. It is needless to enlarge on this matter of mere geometrical discussion. It is with the view of enabling the engineer to trace the windings of a river in such a manner that there shall be no rebounds which shall direct the stream against the sides, but preserve it always in the axis of every reach. This is of consequence, even when the bends of the river are to be secured by masonry or piling; for we have seen the necessity of increasing the section, and the tendency which the waters have to deepen the channel on that side where the rebound is made. This tends

Theory. to undermine our defences, and oblige us to give them deeper and more ſolid foundations in ſuch places. But any perſon accuſtomed to the uſe of the ſcale and compaſſes will form to himſelf rules of practice equally ſure and more expeditious than Mr de Buat's formulæ.

101 Reſiſtance cauſed by an elbow, and mode of overcoming it.

We proceed, therefore, to what is more to our purpoſe, the conſideration of the reſiſtance cauſed by an elbow, and the methods of providing a force capable of overcoming it. We have already taken notice of the ſalutary conſequences ariſing from the rambling courſe of rivers, inaſmuch as it more effectually ſpreads them over the face of a country. It is no leſs beneficial by diminiſhing their velocity. This it does both by lengthening their courſe, which diminiſhes the declivity, and by the very reſiſtance which they meet with at every bend. We derive the chief advantages from our rivers, when they no longer ſhoot their way, from precipice, to precipice, loaded with mud and ſand, but peaceably roll along their clear waters, purified during their gentler courſe, and offer themſelves for all the purpoſes of paſturage, agriculture, and navigation. The more a river winds its way round the foot of the hills, the more is the reſiſtance of its bed multiplied; the more obſtacles it meets with in its way from its ſource to the ſea, the more moderate is its velocity; and inſtead of tearing up the very bowels of the earth, and digging for itſelf a deep trough, along which it ſweeps rocks and rooted up trees, it flows with majeſtic pace even with the ſurface of our cultivated grounds, which it embelliſhes and fertilizes.

We may with ſafety proceed on the ſuppoſition, that the force neceſſary for overcoming the reſiſtance ariſing from a rebound is as the ſquare of the velocity; and it is reaſonable to ſuppoſe it proportional to the ſquare of the ſine of the angle of incidence and this for the reaſons given for adopting this meaſure of the general *Reſistance of Fluids*. It cannot, however, claim a greater confidence here than in that application; and it has been ſhown in that article with what uncertainty and limitations it muſt be received. We leave it to our readers to adopt either this or the ſimple ratio of the ſines, and ſhall abide by the duplicate ratio with Mr Buat, becauſe it appears by his experiments that this law is very exactly obſerved in tubes in inclinations not exceeding 40; whereas it is in theſe ſmall angles that the application to the general reſiſtance of fluids, is moſt in fault. But the correction is very ſimple, if this value ſhall be found erroneous. There can be little doubt that the force neceſſary for overcoming the reſiſtance will increaſe as the number of rebounds.—Therefore we may expreſs the reſiſtance, in general, by the formula $r = \frac{V^2 s^2 n}{m}$; where r is the reſiſtance, V the mean velocity of the ſtream, s the ſine of the angle of incidence, n the number of equal rebounds (that is, having equal angles of incidence), and m is a number to be determined by experiment. Mr de Buat made many experiments on the reſiſtance occaſioned by the bendings of pipes, none of which differed from the reſult of the above formula above one part in twelve; and he concludes, that the reſiſtance to one bend may be eſtimated at $\frac{V^2 s^2}{3000}$.

The experiment was in this form: A pipe of 1 inch diameter, and 10 feet long, was formed with 10 rebounds of 36° each. A head of water was applied to it, which gave the water a velocity of ſix feet *per ſecond*. Another pipe of the ſame diameter and length, but without any bendings, was ſubjected to a preſſure of a head of water, which was increaſed till the velocity of efflux was alſo ſix feet *per* ſecond. The additional head of water was $5\frac{8}{10}$ inches. Another of the ſame diameter and length, having one bend of 24° 34′, and running 85 inches *per* ſecond, was compared with a ſtraight pipe having the ſame velocity, and the difference of the heads of water was $\frac{11}{100}$ of an inch. A computation from theſe two experiments will give the above reſult, or in Engliſh meaſure $r = \frac{V^2 s^2}{3200}$ very nearly. It is probable that this meaſure of the reſiſtance is too great; for the pipe was of uniform diameter even in the bends: whereas in a river properly formed, where the regimen is exact, the capacity of the ſection of the bend is increaſed.

Theory. Throry.

102 Theory applied to inclined tubes and open ſtreams.

The application of this theory to inclined tubes and to open ſtreams is very obvious, and very ligitimate and ſafe. Let AB (fig. 17.) be the whole height of the reſervoir A B I K, and B C the horizontal length of a pipe, containing any number of rebounds, equal or unequal, but all regular, that is, conſtructed according to the conditions formerly mentioned. The whole head of water ſhould be conceived as performing, or as divided into portions which perform, three different offices.—One portion, $AD = \frac{V^2}{505}$, impels the water into the entry of the pipe with the velocity with which it really moves in it; another portion EB is in equilibrio with the reſiſtances ariſing from the mere length of the pipe expanded into a ſtraight line; and the third portion DE ſerves to overcome the reſiſtance of the bends. If, therefore, we draw the horizontal line B C, and, taking the pipe BC out of its place, put it in the poſition DH, with its mouth C in H, ſo that DH is equal to BC, the water will have the ſame velocity in it that it had before. *N. B.* For greater ſimplicity of argument, we may ſuppoſe that when the pipe was inſerted at B, its bends lay all in a horizontal plane, and that when it is inſerted at D, the plane in which all its bends lie ſlopes only in the direction DH, and is perpendicular to the plane of the figure. We repeat it, the water will have the ſame velocity in the pipes BC and D H, and the reſiſtances will be overcome. If we now prolong the pipe DH towards L to any diſtance, repeating continually the ſame bendings in a ſeries of lengths, each equal to DH, the motion will be continued with the velocity correſponding to the preſſure of the column AD; becauſe the declivity of the pipe is augmented in each length equal to DH, by a quantity preciſely ſufficient for overcoming all the reſiſtances in that length; and the true ſlope in theſe caſes is BE + ED, divided by the expanded length of the pipe BC or DH.

The analogy which we were enabled to eſtabliſh between the uniform motion of the train of pipes and of open ſtreams, entitles us now to ſay, that when a river has bendings, which are regularly repeated at equal intervals, its ſlope is compounded of the ſlope which is neceſſary for overcoming the reſiſtance of a ſtraight channel of its whole expanded length, agreeably to

Theory. the formula for uniform motion, and of the slope which is necessary for overcoming the resistance arising from its bending alone.

Thus, let there be a river which, in the expanded course of 6000 fathoms, has 10 elbows, each of which has 30° of rebound; and let its mean velocity be 20 inches in a second. If we would learn its whole slope in this 6000 fathoms, we must first find (by the formula of uniform motion) the slope s which will produce the velocity of 20 inches in a straight river of this length, section, and mean depth. Suppose this to be $\frac{1}{11000}$, or 20 inches in this whole length. We must then find (by the formula $\frac{V^2 \mathrm{Sin}^2}{3200}$) the slope necessary for overcoming the resistance of 10 rebounds of 30° each. This we shall find to be $6\frac{2}{3}$ inches in the 6000 fathoms. Therefore the river must have a slope of $26\frac{2}{3}$ inches in 6000 fathoms, or $\frac{1}{1350}$; and this slope will produce the same velocity which 20 inches, or $\frac{1}{11000}$, would do in a straight running river of the same length. Theory.

Part II. PRACTICAL INFERENCES.

HAVING thus established a theory of a most important part of hydraulics, which may be confided in as a just representation of nature's procedure, we shall apply it to the examination of the chief results of every thing which art has contrived for limiting the operations of nature, or modifying them so as to suit our particular views. Trusting to the detail which we have given of the connecting principles, and the chief circumstances which co-operate in producing the ostensible effect; and supposing that such of our readers as are interested in this subject will not think it too much trouble to make the applications in the same detail; we shall content ourselves with merely pointing out the steps of the process, and showing their foundation in the theory itself: and frequently, in place of the direct analysis which the theory enables us to employ for the solution of the problems, we shall recommend a process of approximation by trial and correction, sufficiently accurate, and more within the reach of practical engineers. We are naturally led to consider in order the following articles.

103 Approximation by trial and correction recommended to practical engineers.

1. The effects of permanent additions of every kind to the waters of a river, and the most effectual methods of preventing or removing inundations.

2. The effects of weirs, bars, sluices, and keeps of every kind, for raising the surface of a river; and the similar effects of bridges, piers, and every thing which contracts the section of the stream.

3. The nature of canals; how they differ from rivers in respect of origin, discharge, and regimen, and what conditions are necessary for their most perfect construction.

4. Canals for draining land, and drafts or canals of derivation from the main stream. The principles of their construction, so that they may suit their intended purposes, and the change which they produce on the main stream, both above and below the point of derivation.

Of the effects of permanent additions to the waters of a river.

104 Problems and examples of the effects of permanent additions to the waters of a river.

From what has been said already, it appears that to every kind of soil or bed there corresponds a certain velocity of current, too small to hurt it by digging it up, and too great to allow the deposition of the materials which it is carrying along. Supposing this known for any particular situation, and the quantity of water which the channel must of necessity discharge, we may wish to learn the smallest slope which must be given to this stream, that the waters may run with the required velocity. This suggests

Prob. I. Given the discharge D of a river, and V its velocity of regimen: required the smallest slope s, and the dimensions of its bed?

Since the slope must be the smallest possible, the bed must have the form which will give the greatest mean depth d, and should therefore be the trapezium formerly described; and its area and perimeter are the same with those of a rectangle whose breadth is twice its height b. These circumstances give us the equation $\frac{D}{V} = 2b^2$. For the area of the section is twice the square of the height, and the discharge is the product of this area and the velocity. Therefore $\sqrt{\frac{D}{2V}} = b$ and $\sqrt{\frac{2D}{V}}$ = the breadth b.

The formula of uniform motion gives $\sqrt{s} - \mathrm{L}\sqrt{s} + 1{,}6 = \frac{297\,(\sqrt{d} - 0.1}{V + 0{,}3\,(\sqrt{d} - 0{,}1)}$. Instead of $\sqrt{d} - 0{,}1$, put its equal $\sqrt{\frac{b}{2}} - 0{,}1$, and every thing being known in the second member of this equation, we easily get the value of s by a few trials after the following manner. Suppose that the second member is equal to any number, such as 9. First suppose that $\sqrt{s}$ is $= 9$. Then the hyperbolic logarithm of $9 + 1{,}6$ or of $10{,}6$ is 2,36. Therefore we have $\sqrt{s} - \mathrm{L}\sqrt{s} + 1{,}6 = 9 - 2{,}36 = 6{,}64$; whereas it should have been $= 9$. Therefore say $6{,}64 : 9 = 9 : 12{,}2$ nearly. Now suppose that $\sqrt{s}$ is $= 12{,}2$. Then L $12{,}2 + 1{,}6 = \mathrm{L}\,13{,}8 = 2{,}625$ nearly, and $12{,}2 - 2625$ is 9,575, whereas it should be 9. Now we find that changing the value of $\sqrt{s}$ from 9 to 12,2 has changed the answer from 6,64 to 9,575, or a change of 3,2 in our assumption has made a change of 2,935 in the answer, and has left an error of 0,575. Therefore say $2{,}935 : 0{,}575 = 3{,}2 : 0{,}628$. Then, taking 0,628 from 12,2, we have (for our next assumption or value of $\sqrt{s}$) 11,572. Now $11{,}572 + 1{,}6 = 13{,}172$, and L 13,172 is 2,58 nearly. Now try this last value $11{,}572 - 2{,}58$ is 9,008, sufficiently exact. This may serve as a specimen of the trials by which we may avoid an intricate analysis.

Prob. II. Given the discharge D the slope s, and the velocity V, of permanent regimen, to find the dimensions of the bed.

Let x be the width, and y the depth of the channel, and S the area of the section. This must be $= \frac{D}{V^2}$ which is therefore $= xy$. The denominator s being given,

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given, we may make $\sqrt{s}-L\sqrt{s+1,6}=\sqrt{B}$, and the formula of mean velocity will give $V=\frac{297(\sqrt{d}-0,1)}{\sqrt{B}}-0,3\ (\sqrt{d}-0,1)$, which we may expreſs thus: $V=(\sqrt{d}-0,1)\left(\frac{297}{\sqrt{B}}-0,3\right)$, which gives $\frac{V}{\frac{297}{\sqrt{B}}-0,3}=\sqrt{d}-0,1$; and finally, $\frac{V}{\frac{297}{\sqrt{B}}-0,3}+0,1=\sqrt{d}$.

Having thus obtained what we called the mean depth, we may ſuppoſe the ſection rectangular. This gives $d=\frac{xy}{x+2y}$. Thus we have two equations, $S=xy$ and $d=\frac{xy}{x+2y}$.

From which we obtain $x=\sqrt{\left(\frac{S}{2d}\right)^2-2S}+\frac{S}{2d}$.

And having the breadth x and area S, we have $y=\frac{S}{x}$. And then we may change this for the trapezium oſten mentioned.

Theſe are the chief problems on this part of the ſubject, and they enable us to adjuſt the ſlope and channel of a river which receives any number of ſucceſſive permanent additions by the influx of other ſtreams. This laſt informs us of the riſe which a new ſupply will produce, becauſe the additional ſupply will require additional dimenſions of the channel; and as this is not ſuppoſed to increaſe in breadth, the addition will be in depth. The queſtion may be propoſed in the following problem.

Prob. III. Given the ſlope s, the depth and the baſe of a rectangular bed (or a trapezium), and conſequently the diſcharge D, to find how much the ſection will riſe, if the diſcharge be augmented by a given quantity.

Let h be the height after the augmentation, and w the width for the rectangular bed. We have in any uniform current $\sqrt{d}=\frac{V}{\frac{297}{\sqrt{B}}-0,3}$. Raiſing this to a ſquare, and putting for d and V their values $\frac{wh}{w+2h}$ and $\frac{D}{wh}$, and making $\frac{297}{\sqrt{B}}-0,3=K$, the equation becomes $\frac{wh}{w+2h}=\left(\frac{D}{whK}+0,1\right)^2$. Raiſing the ſecond member to a ſquare, and reducing, we obtain a cubic equation, to be ſolved in the uſual manner.

But the ſolution would be extremely complicated. We may obtain a very expeditious and exact approximation from this conſideration, that a ſmall change in one of the dimenſions of the ſection will produce a much greater change in the ſection and the diſcharge than in the mean depth d. Having therefore augmented the unknown dimenſion, which is here the height, make uſe of this to form a new mean depth, and then the new equation $\sqrt{d}=\frac{D}{wh\left(\frac{297}{\sqrt{B}}-0,3\right)}+0,1$ will give us another value of h, which will rarely exceed the truth by $\frac{1}{100}$. This ſerves (by the ſame proceſs) for finding another, which will commonly be ſufficiently exact. We ſhall illuſtrate this by an example.

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Let there be a river whoſe channel is a rectangle 150 feet wide and ſix feet deep, and which diſcharges 1500 cubic feet of water per ſecond, having a velocity of 20 inches, and ſlope of $\frac{1}{1250}$, or about $\frac{1}{12}$ of an inch in 100 fathoms. How much will it riſe if it receives an addition which triples its diſcharge; and what will be its velocity?

If the velocity remained the ſame, its depth would be tripled; but we know by the general formula that its velocity will be greatly increaſed, and therefore its depth will not be tripled. Suppoſe it to be doubled, and to become 12 feet. This will give $d=10,34483$, or 124,138 inches; then the equation $\sqrt{d}-0,1=\frac{D}{wh\left(\frac{297}{\sqrt{B}}-0,3\right)}$, or $h=\frac{D}{w(\sqrt{d}-0,1)\left(\frac{297}{\sqrt{B}}-0,3\right)}$, and in which we have $\sqrt{B}=107,8$, $D=4500$; $\sqrt{d}-0,1=11,0417$, will give $h=13,276$; whereas it ſhould have been 12. This ſhows that our calculated value of d was too ſmall. Let us therefore increaſe the depth by 0,9, or make it 12,9, and repeat the calculation. This will give us $\sqrt{d}-0,1=11,3927$, and $h=12,867$, inſtead of 13,276. Therefore augmenting our data 0,9 changes our anſwer 0,409. If we ſuppoſe theſe ſmall changes to retain their proportions, we may conclude that if 12 be augmented by the quantity $x\times 0,9$, the quantity 13,276 will diminiſh by the quantity $x\times 0,409$. Therefore, that the eſtimated value of h may agree with the one which reſults from the calculation, we muſt have $12+x\times 0,9=13,276-x\times 0,409$. This will give $x=\frac{1,276}{1,309}$, $=0,9748$, and $x\times 0,9=0,8773$; and $h=12,8773$. If we repeat the calculation with this value of h, we ſhall find no change.

This value of h gives $d=131,8836$ inches. If we now compute the new velocity by dividing the new diſcharge 4500 by the new area $150\times 12,8773$, we ſhall find it to be 27,95 inches, in place of 20, the former velocity.

We might have made a pretty exact firſt aſſumption, by recollecting what was formerly obſerved, that when the breadth is very great in proportion to the depth, the mean depth differs inſenſibly from the real depth, or rather follows nearly the ſame proportions, and that the velocities are proportional to the ſquare roots of the depths. Call the firſt diſcharge d, the height h, and velocity v, and let D, H, and V, expreſs theſe things in their augmented ſtate. We have $v=\frac{d}{wh}$ and $V=\frac{D}{wH}$, and $v:V=\frac{d}{h}:\frac{D}{H}$, and $v^2:V^2=\frac{d^2}{h^2}:\frac{D^2}{H^2}$. But by this remark $v^2:V^2=h:H$. Therefore $h:H=\frac{d^2}{h^2}:\frac{D^2}{H^2}$, and $\frac{hD^2}{H^2}=\frac{Hd^2}{h^2}$, and $h^3D^2=H^3d^2$, and $d^2:D^2=h^3:H^3$ (a uſeful theorem) and $H^3=\frac{h^3D^2}{d^2}$, and $H=\sqrt[3]{\frac{hD^2}{d^2}}=12,48$.

Or we might have made the ſame aſſumption by the

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remark alſo formerly made on this caſe, that the ſquares of the diſcharges are nearly as the cubes of the height, or $15^2 : 45^2 = 6^2 : 12{,}48^2$.

And in making theſe firſt gueſſes we ſhall do it more exactly, by recollecting that a certain variation of the mean depth d requires a greater variation of the height, and the increment will be to the height nearly as half the height to the width, as may eaſily be ſeen. Therefore, if we add to 12,48 its $\frac{6,24}{150}$ th part, or its 24th part, viz. 0,52, we have 13 for our firſt aſſumption, exceeding the truth only an inch and a half. We mention theſe circumſtances, that thoſe who are diſpoſed to apply theſe doctrines to the ſolution of practical caſes may be at no loſs when one occurs of which the regular ſolution requires an intricate analyſis.

105 The inverſe of the problems ſhow the effects of enlarging the ſection of a river,

It is evident that the inverſe of the foregoing problems will ſhow the effects of enlarging the ſection of a river, that is, will ſhow how much its ſurface will be ſunk by any propoſed enlargement of its bed. It is therefore needleſs to propoſe ſuch problems in this place. Common ſenſe directs us to make theſe enlargements in thoſe parts of the river where their effect will be greateſt, that is, where it is ſhalloweſt when its breadth greatly exceeds its depth, or where it is narroweſt (if its depth exceed the breadth, which is a very rare caſe), or in general, where the ſlope is the ſmalleſt for a ſhort run.

106 And direct us in the method of embankments.

The ſame general principles direct us in the method of embankments, for the prevention of floods, by enabling us to aſcertain the heights neceſſary to be given to our banks. This will evidently depend, not only on the additional quantity of water which experience tells us a river brings down during its freſhes, but alſo on the diſtance at which we place the banks from the natural banks of the river. This is a point where miſtaken economy frequently defeats its own purpoſe. If we raiſe our embankment at ſome diſtance from the natural banks of the river, not only will a ſmaller height ſuffice, and conſequently a ſmaller baſe, which will make a ſaving in the duplicate proportion of the height; but our works will be ſo much the more durable nearly, if not exactly, in the ſame proportion. For by thus enlarging the additional bed which we give to the ſwollen river, we diminiſh its velocity almoſt in the ſame proportion that we enlarge its channel, and thus diminiſh its power of ruining our works. Except, therefore, in the caſe of a river whoſe freſhes are loaded with fine ſand to deſtroy the turf, it is always proper to place the embankment at a conſiderable diſtance from the natural banks. Placing them at half the breadth of the ſtream from its natural banks, will nearly double its channel; and, except in the caſe now mentioned, the ſpace thus detached from our fields will afford excellent paſture.

The limits of ſuch a work as ours will not permit us to enter into any detail on the method of embankment. It would require a volume to give inſtructions as to the manner of founding, raiſing, and ſecuring the dykes which muſt be raiſed, and a thouſand circumſtances which muſt be attended to. But a few general obſervations may be made, which naturally occur while we are conſidering the manner in which a river works in ſettling or altering its channel.

It muſt be remarked, in the firſt place, that the river will riſe higher when embanked than it does while it was allowed to ſpread; and it is by no means eaſy to conclude to what height it will riſe from the greateſt height to which it has been obſerved to riſe in its floods. When at liberty to expand over a wide valley; then it could only riſe till it overflowed with a thickneſs or depth of water ſufficient to produce a motion backwards into the valley quick enough to take off the water as faſt as it was ſupplied; and we imagine that a foot or two would ſuffice in moſt caſes. The beſt way for a prudent engineer will be to obſerve the utmoſt riſe remembered by the neighbours in ſome gorge, where the river cannot ſpread out. Meaſure the increaſed ſection in this place, and at the ſame time recollect, that the water increaſes in a much greater proportion than the ſection; becauſe an increaſe of the hydraulic mean depth produces an increaſe of velocity in the duplicate proportion of the depth nearly. But as this augmentation of velocity will obtain alſo between the embankments, it will be ſufficiently exact to ſuppoſe that the ſection muſt be increaſed here nearly in the ſame proportion as at the gorge already mentioned. Neglecting this method of information, and regulating the height of our embankment by the greateſt ſwell that has been obſerved in the plain, will aſſuredly make them too low, and render them totally uſeleſs.

A line of embankment ſhould always be carried on by a ſtrict concert of the proprietors of both banks through its whole extent. A greedy proprietor, by advancing his own embankment beyond that of his neighbours, not only expoſes himſelf to riſk by the working of the waters on the angles which this will produce, but expoſes his neighbours alſo to danger, by narrowing the ſection, and thereby raiſing the ſurface and increaſing the velocity, and by turning the ſtream athwart, and cauſing it to ſhoot againſt the oppoſite bank. The whole ſhould be as much as poſſible in a line; and the general effect ſhould be to make the courſe of the ſtream ſtraighter than it was before. All bends ſhould be made more gentle, by keeping the embankment further from the river in all convex lines of the natural bank, and bringing it nearer where the bank is concave. This will greatly diminiſh the action of the waters on the bankment, and inſure their duration. The ſame maxim muſt be followed in fencing any brook which diſcharges itſelf into the river. The bends given at its mouth to the two lines of embankment ſhould be made leſs acute than thoſe of the natural brook, although, by this means, two points of land are left out. And the opportunity ſhould be embraced of making the direction of this tranſverſe brook more ſloping than before, that is, leſs athwart the direction of the river.

It is of great conſequence to cover the outſide of the dyke with very compact turf cloſely united. If it admit water, the interior part of the wall, which is always more porous, becomes drenched in water, and this water acts with its ſtatical preſſure, tending to burſt the bank on the land-ſide, and will quickly ſhift it from its ſeat. The utmoſt care ſhould therefore be taken to make it and keep it perfectly tight. It ſhould be a continued fine turf, and every bare ſpot ſhould be carefully covered with freſh ſod; and rat holes muſt be carefully cloſed up.

Of

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Of ſtraighting or changing the courſe of rivers.

107 Of the ſlope required at the bend of a river and the conſequences.

We have ſeen, that every bending of a river requires an additional ſlope in order to continue its train, or enable, it to convey the ſame quantity of water without ſwelling in its bed. Therefore the effect of taking away any of theſe bends muſt be to ſink the waters of the river. It is proper, therefore, to have it in our power to eſtimate theſe effects. It may be deſirable to gain property, by taking away the ſweeps of a very winding ſtream. But this may be prejudicial, by deſtroying the navigation on ſuch a river. It may alſo hurt the proprietors below, by increaſing the velocity of the ſtream, which will expoſe them to the riſk of its overflowing, or of its deſtroying its bed, and taking a new courſe. Or this increaſe of velocity may be inconſiſtent with the regimen of the new channel, or at leaſt require larger dimenſions than we ſhould have given it if ignorant of this effect.

Our principles of uniform motion enable us to anſwer every queſtion of this kind which can occur; and Mr de Buat propoſes ſeveral problems to this effect. The regular ſolutions of them are complicated and difficult; and we do not think them neceſſary in this place, becauſe they may all be ſolved in a manner not indeed ſo elegant, becauſe indirect, but abundantly accurate, and eaſy to any perſon familiar with thoſe which we have already conſidered.

We can take the exact level acroſs all theſe ſweeps, and thus obtain the whole ſlope. We can meaſure with accuracy the velocity in ſome part of the channel which is moſt remote from any bend, and where the channel itſelf has the greateſt regularity of form. This will give us the expence or diſcharge of the river, and the mean depth connected with it. We can then examine whether this velocity is preciſely ſuch as is compatible with ſtability in the ſtraight courſe. If it is, it is evident that if we cut off the bends, the greater ſlope which this will produce will communicate to the waters a velocity incompatible with the regimen ſuited to this ſoil, unleſs we enlarge the width of the ſtream, that is unleſs we make the new channel more capacious than the old one. We muſt now calculate the dimenſions of the channel which, with this increaſed ſlope, will conduct the waters with the velocity that is neceſſary. All this may be done by the foregoing problems; and we may eaſieſt accompliſh this by ſteps. Firſt, ſuppoſe the bed the ſame with the old one, and calculate the velocity for the increaſed ſlope by the general formula. Then change one of the dimenſions of the channel, ſo as to produce the velocity we want, which is a very ſimple proceſs. And in doing this, the object to be kept chiefly in view is not to make the new velocity ſuch as will be incompatible with the ſtability of the new bed.

Having accompliſhed this firſt purpoſe, we learn (in the very ſolution) how much ſhallower this channel with its greater ſlope will be than the former, while it diſcharges all the waters. This diminution of depth muſt increaſe the ſlope and the velocity, and muſt diminiſh the depth of the river, above the place where the alteration is to be made. How far it produces theſe effects may be calculated by the general formula. We then ſee whether the navigation will be hurt, either in the old river up the ſtream, or in the new channel. It is plain that all theſe points cannot be reconciled. We may make the new channel ſuch, that it ſhall leave a velocity compatible with ſtability, and that it ſhall not diminiſh the depth of the river up the ſtream. But, having a greater ſlope, it muſt have a ſmaller mean depth, and alſo a ſmaller real depth, unleſs we make it of a very inconvenient form. Practical Inferences.

The ſame things viewed in a different light, will ſhow us what depreſſion of waters may be produced by rectifying the courſe of a river in order to prevent its overflowing. And the proceſs which we would recommend is the ſame with the foregoing. We apprehend it to be quite needleſs to meaſure the angles of rebound, in order to *compute* the ſlope which is *employed* for ſending the river through the bend, with a view to ſuperſede this by ſtraighting the river. It is infinitely eaſier and more exact to meaſure the levels themſelves, and then we know the effect of removing them.

Nor need we follow Mr de Buat in ſolving problems for diminiſhing the ſlope and velocity, and deepening the channel of a river by bending its courſe. The expence of this would be in every caſe enormous; and the practices which we are juſt going to enter upon afford infinitely eaſier methods of accompliſhing all the purpoſes which are to be gained by theſe changes.

Of Bars, Weirs, and Jetteys, for raiſing the Surface of Rivers.

108 Problems, examples, and conſequences of raiſing the ſurface of rivers.

We propoſe, under the article *Water-Works*, to conſider in ſufficient practical detail all that relates to the conſtruction and mechaniſm of theſe and other erections in water; and we confine ourſelves, in this place, to the mere effect which they will produce on the current of the river.

We gave the name of *weir* or *bar* to a dam erected acroſs a river for the purpoſe of raiſing its waters, whether in order to take off a draft for a mill or to deepen the channel. Before we can tell the effect which they will produce, we muſt have a general rule for aſcertaining the relation between the height of the water above the lip of the weir or bar, and the quantity of water which will flow over.

Firſt, then, with reſpect to a weir, repreſented in fig. 18. and fig. 18. n° 2. The latter figure more reſembles their uſual form, conſiſting of a dam of ſolid maſonry, or built of timber, properly fortified with ſhoars and banks. On the top is ſet up a ſtrong plank FR, called the waſteboard, or waſter, over which the water flows. This is brought to an accurate level, of the proper height. Such voiders are frequently made in the ſide of a mill-courſe, for letting the ſuperfluous water run off. This is properly the WASTER, VOIDER: it is alſo called an OFFSET. The ſame obſervations will explain all theſe different pieces of practice. The following queſtions occur in courſe.

PROB. I. Given the length of an offset or waſteboard, made in the face of a reſervoir of ſtagnant water, and the depth of its lip under the horizontal ſurface of the water, to determine the diſcharge, or the quantity of water which will run over in a ſecond?

Let AB be the horizontal ſurface of the ſtill water, and F the lip of the waſteboard. Call the depth BF under the ſurface *h*, and the length of the waſteboard *l*. *N. B.* The water is ſuppoſed to flow over into another baſon or channel, ſo much lower than the ſurface

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...ed III. of the water is lower, or at leaft not higher, ... than I.

If the water could be fupported at the height BF, BF might be conſidered as an orifice in the ſide of a veſſel. In which caſe, the diſcharge would be the ſame as if the whole water were flowing with the velocity acquired from the height ⅔ BF, or ⅔ *h*. And if we ſuppoſe that there is no contraction at the orifice, the mean velocity would be $\sqrt{2g \cdot \frac{2}{3}h} = \sqrt{\frac{4}{3}gh}$, in Engliſh inches per ſecond. The area of this orifice is $l\,h$. Therefore the diſcharge would be $l\,h\sqrt{\frac{4}{3}gh}$, all being meaſured in inches. This is the uſual theory; but it is not an exact repreſentation of the manner in which the efflux really happens. The water cannot remain at the height BF; but in drawing towards the waſteboard from all ſides, it forms a convex ſurface AIH, ſo that the point I, where the vertical drawn from the edge of the waſteboard meets the curve, is conſiderably lower than B. But as all the mafs above F is ſuppoſed perfectly fluid, the preſſure of the incumbent water is propagated, in the opinion of Mr de Buat, to the filament paſſing over at F without any diminution. The ſame may be ſaid of any filament between F and I. Each tends, therefore, to move in the ſame manner as if it were really impelled though an orifice in its place. Therefore the motions through every part of the line or plane IF are the ſame as if the water were eſcaping through an orifice IF, made by a ſluice let down on the water, and keeping up the water of the reſervoir to the level AB. It is beyond a doubt (ſays he) that the height IF muſt depend on the whole height BF, and that there muſt be a certain determined proportion between them. He does not attempt to determine this proportion theoretically, but ſays, that his experiments aſcertain it with great preciſion to be the proportion of one to two, or that IF is always one-half of BF. He ſays, however, that this determination was not by an immediate and direct meaſurement; he concluded it from the compariſon of the quantities of water diſcharged under different heights of the water in the reſervoir.

We cannot help thinking that this reaſoning is very defective in ſeveral particulars. It cannot be inferred, from the laws of hydroſtatical preſſure, that the filament at I is preſſed forward with all the weight of the column BI. The particle I is really at the ſurface; and conſidering it as making part of the ſurface of a running ſtream, it is ſubjected to hardly any preſſure, any more than the particles on the ſurface of a cup of water held in the hand, while it is carried round the axis of the earth and round the ſun. Reaſoning according to his own principles, and availing himſelf of his own diſcovery, he ſhould ſay, that the particle at I has an accelerating force depending on its ſlope only; and then he ſhould have endeavoured to aſcertain this ſlope. The motion of the particle at I has no immediate connection with the preſſure of the column BI; and if it had, the motion would be extremely different from what it is: for this preſſure alone would give it the velocity which Mr Buat aſſigns it. Now it is already paſſing through the point I with the velocity which it has acquired in deſcending along the curve AI; and this is the real ſtate of the caſe. The particles are paſſing through with a velocity already acquired by a ſloping current; and they are accelerated by the hydroſtatical preſſure of the water above them. The internal mechaniſm of theſe motions is infinitely more complex than Mr Buat here ſuppoſes; and on this ſuppoſition, he very nearly abandons the theory which he has ſo ingeniouſly eſtabliſhed, and adopts the theory of Guglielmini which he had exploded. At the ſame time, we think that he is not much miſtaken when he aſſerts, that the motions are nearly the ſame as if a ſluice had been let down from the ſurface to I. For the filament which paſſes at I has been gliding down a curved ſurface, and has not been expoſed to any friction. It is perhaps the very caſe of hydraulics, where the obſtructions are the ſmalleſt; and we ſhould therefore expect that its motion will be the leaſt retarded.

We have therefore no heſitation in ſaying, that the filament at I is in the very ſtate of motion which the theory would aſſign to it if it were paſſing under a ſluice, as Mr Buat ſuppoſes. And with reſpect to the interior filaments, without attempting the very difficult taſk of inveſtigating their motions, we ſhall juſt ſay, that we do not ſee any reaſon for ſuppoſing that they will move ſlower than our author ſuppoſes. Therefore, though we reject his theory, we admit his experimental propoſition in general; that is, we admit that the *whole* water which paſſes through the plane IF moves with the velocity (though not in the ſame direction) with which it would have run through a ſluice of the ſame depth; and we may proceed with his determination of the quantity of water diſcharged.

If we make BC the axis of a parabola BEGH, the velocities of the filaments paſſing at I and F will be repreſented by the ordinates IE and FG, and the diſcharge by the area IEGF. This allows a very neat ſolution of the problem. Let the quantity diſcharged per ſecond be D, and let the whole height BF be *h*. Let 2 G be the quantity by which we muſt divide the ſquare of the mean velocity, in order to have the producing height. This will be leſs than $2g$, the acceleration of gravity, on account of the convergency at the ſides and the tendency to convergence at the lip F. We formerly gave for its meaſure 726 inches, inſtead of 772, and ſaid that the inches diſcharged per ſecond from an orifice of one inch were 26,49, inſtead of 27,78. Let x be the diſtance of any filament from the horizontal line AB. An element of the orifice, therefore, (for we may give it this name) is $l\,\dot{x}$. The velocity of this element is $\sqrt{2Gx}$, or $\sqrt{2\,G} \times \sqrt{x}$. The diſcharge from it is $l\sqrt{2G}x^{\frac{1}{2}}\dot{x}$, and the fluent of this, or $D = \int l\sqrt{2G}x^{\frac{1}{2}}\dot{x}$, which is $\frac{2}{3}\,l\sqrt{2G}x^{\frac{3}{2}} + C$. To determine the conſtant quantity C, obſerve that Mr de Buat found by experiment that BI was in all caſes ⅓ BF. Therefore D muſt be nothing when $x = \frac{1}{3}h$; conſequently $C = -\frac{2}{3}\,l\sqrt{2\,G}\left(\frac{h}{2}\right)^{\frac{3}{2}}$, and the completed fluent, will be $D = \frac{2}{3}\,l\sqrt{2G}\left(x^{\frac{3}{2}} - \left(\frac{h}{2}\right)^{\frac{3}{2}}\right)$.

Now make $x = h$, and we have

$$D = \tfrac{2}{3}\,l\sqrt{2G}\left(h^{\frac{3}{2}} - \left(\frac{h}{2}\right)^{\frac{3}{2}}\right) = \tfrac{2}{3}\,l\sqrt{2G}\left(1 - \left(\tfrac{1}{2}\right)^{\frac{3}{2}}\right)h^{\frac{3}{2}}.$$

But $1 - \left(\frac{1}{2}\right)^{\frac{3}{2}} = 0{,}64645$, and ⅔ of this is 0,431: Therefore, finally,

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$D = 0{,}431\ (\sqrt{2G}\, h^{\frac{1}{2}} \times l.)$.

If we now put 26,49 or $26\frac{1}{2}$ for $\sqrt{2G}$, or the velocity with which a head of water of one inch will impel the water over a weir, and multiply this by 0,431, we get the following quantity 11,4172, or, in numbers of eaſy recollection, $11\frac{1}{2}$, for the cubic inches of water per ſecond, which runs over every inch of a waſteboard when the edge of it is one inch below the ſurface of the reſervoir; and this muſt be multiplied by $h^{\frac{1}{2}}$, or by the ſquare root of the cube of the head of water. Thus let the edge of the waſteboard be four inches below the ſurface of the water. The cube of this is 64, of which the ſquare root is eight. Therefore a waſteboard of this depth under the ſurface, and three feet long, will diſcharge every ſecond $8 \times 36 \times 11\frac{1}{2}$ cubic inches of water, or $1\frac{8}{10}$ cubic feet, Engliſh meaſure.

The following compariſons will ſhow how much this theory may be depended on. Col. 1. ſhows the depth of the edge of the board under the ſurface; 2. ſhows the diſcharge by theory; and, 3. the diſcharge actually obſerved. The length of the board was $18\frac{1}{2}$ inches. *N. B.* The numbers in Mr Buat's experiments are here reduced to Engliſh meaſure.

D.	*D. Theor.*	*D. Exp.*	*E.*
1,778	506	524	28,98
3,199	1222	1218	69,83
4,665	2153	2155	123,03
6,753	3750	3771	214,29

The laſt column is the cubic inches diſcharged in a ſecond by each inch of the waſteboard. The correſpondence is undoubtedly very great. The greateſt error is in the firſt, which may be attributed to a much ſmaller lateral contraction under ſo ſmall a head of water.

But it muſt be remarked, that the calculation proceeds on two ſuppoſitions. The height FI is ſuppoſed $\frac{1}{4}$ of BI; and 2G is ſuppoſed 726. It is evident, that by increaſing the one and diminiſhing the other, nearly the ſame anſwers may be produced, unleſs much greater variations of h be examined. Both of theſe quantities are matters of conſiderable uncertainty, particularly the firſt; and it muſt be farther remarked, that this was not meaſured, but deduced from the uniformity of the experiments. We preſume that Mr Buat tried various values of G, till he found one which gave the *ratios* of diſcharge which he obſerved. We beg leave to obſerve, that in a ſet of numerous experiments which he had acceſs to examine, BI was uniformly much leſs than $\frac{1}{2}$; it was very nearly $\frac{2}{7}$: and the quantity diſcharged was greater than what would reſult from Mr Buat's calculation. It was farther obſerved, that IF depended very much on the form of the waſteboard. When it was a very thin board of conſiderable depth, IF was very conſiderably greater than if the board was thick, or narrow, and ſet on the top of a broad dam-head, as in fig. 18. n° 2.

It may be proper to give the formula a form which will correſpond to any ratio which experience may diſcover between BF and IF. Thus, let BI be $\frac{m}{n}$ BF.

The formula will be $D = \frac{2}{3}\, l \sqrt{2G} \left(1 - \left(\frac{m}{n}\right)^{\frac{3}{2}}\right) h^{\frac{3}{2}}$

It is hoped that this and ſome other fundamental facts in practical hydraulics will ſoon be determined by accurate experiments. The honourable Board for Fiſheries and Improvements in Scotland have allotted a ſum of money for making the neceſſary experiments, and the reſults will be publiſhed by their authority. Meantime, this theory of Mr de Buat is of great value to the practical engineer, who at preſent muſt content himſelf with a very vague conjecture, or take the calculation of the erroneous theory of Guglielmini. By that theory, the board of three feet, at the depth of four inches, ſhould diſcharge nearly $3\frac{1}{10}$ cubic feet per ſecond, which is almoſt double of what it really delivers.

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We preſume, therefore, that the following table will be acceptable to practical engineers, who are not familiar with ſuch computations. It contains, in the firſt column, the depth in Engliſh inches from the ſurface of the ſtagnant water of a reſervoir to the edge of the waſteboard. The ſecond column is the cubic feet of water diſcharged in a minute by every inch of the waſteboard.

Depth.	*Diſcharge.*
1	0,403
2	1,140
3	2,095
4	3,225
5	4,507
6	5,925
7	7,466
8	9,122
9	10,884
10	12,748
11	14,707
12	16,758
13	18,895
14	21,117
15	23,419
16	25,800
17	28,258
18	30,786

When the depth does not exceed four inches, it will not be exact enough to take proportional parts for the fractions of an inch. The following method is exact.

If they be odd quarters of an inch, look in the table for as many inches as the depth contains quarters, and take the eighth part of the anſwer. Thus, for $3\frac{3}{4}$ inches, take the eighth part of 23,419, which correſponds to 15 inches. This is 2,927.

If the waſteboard is not on the face of a dam, but in a running ſtream, we muſt augment the diſcharge by multiplying the ſection by the velocity of the ſtream. But this correction can ſeldom occur in practice; becauſe, in this caſe, the diſcharge is previouſly known; and it is h that we want; which is the object of the next problem.

We only beg leave to add, that the experiments which we mention as having been already made in this country, give a reſult ſomewhat greater than this table, *viz.* about $\frac{1}{10}$. Therefore, having obtained the anſwer by this table, add to it its 16th part, and we apprehend that it will be extremely near the truth.

When, on the other hand, we know the diſcharge over a waſteboard, we can tell the depth of its edge under the ſurface of the ſtagnant water of the reſervoir, becauſe we have $h = \left(\frac{D}{11\frac{1}{2}l}\right)^{\frac{2}{3}}$ very nearly.

We

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We are now in a condition to ſolve the problem reſpecting a weir acroſs a river.

Prob. II. The diſcharge and ſection of a river being given, it is required to determine how much the waters will be raiſed by a weir of the whole breadth of the river, diſcharging the water with a clear fall, that is, the ſurface of the water in the lower channel being below the edge of the weir?

In this caſe we have $2G = 746$ nearly, becauſe there will be no contraction at the ſides when the weir is the whole breadth of the river. But further, the water is not now ſtagnant, but moving with the velocity $\frac{D}{S}$, S being the ſection of the river.

Therefore let a be the height of the weir from the bottom of the river, and b the height of the water above the edge of the weir. We have the velocity with which the water approaches the weir $= \frac{D}{l(a+b)}$, l being the length of the weir or breadth of the river. Therefore the height producing the primary mean velocity is $\left(\frac{D}{l\sqrt{2g}\,(a+b)}\right)^2$. The equation given a little ago will give $b = \left(\frac{D}{0{,}431\,l\sqrt{2G}}\right)^{\frac{2}{3}}$, when the water above the weir is ſtagnant. Therefore, when it is already moving with the velocity $\frac{D}{la+b}$, we ſhall have $b = \left(\frac{D}{0{,}431\,\sqrt{2G}}\right)^{\frac{2}{3}} - \left(\frac{D}{l\sqrt{2G}\,(a+b)}\right)^2$. It would be very troubleſome to ſolve this equation regularly, becauſe the unknown quantity b is found in the ſecond term of the anſwer. But we know that the height producing the velocity above the weir is very ſmall in compariſon of b and of a, and, if only eſtimated roughly, will make a very inſenſible change in the value of b; and, by repeating the operation, we can correct this value, and obtain b to any degree of exactneſs.

To illuſtrate this by an example. Suppoſe a river, the ſection of whoſe ſtream is 150 feet, and that it diſcharges 174 cubic feet of water in a ſecond; how much will the waters of this river be raiſed by a weir of the ſame width, and 3 feet high?

Suppoſe the width to be 50 feet. This will give 3 feet for the depth; and we ſee that the water will have a clear fall, becauſe the lower ſtream will be the ſame as before.

The ſection being 150 feet, and the diſcharge 174, the mean velocity is $\frac{174}{150}$, $= 1{,}16$ feet, $= 14$ inches nearly, which requires the height of $\frac{1}{4}$ of an inch very nearly. This may be taken for the ſecond term of the value of b. Therefore $b = \left(\frac{D}{0{,}431\sqrt{2G}\,l}\right)^{\frac{2}{3}} - \frac{1}{4}$. Now $\sqrt{2G}$ is, in the preſent caſe, $= 27{,}313$; l is 600, and D is 174×1728, $= 300672$. Therefore $b = 12{,}192 - 0{,}25$, $= 11{,}942$. Now correct this value of b, by correcting the ſecond term, which is $\frac{1}{4}$ of an inch, inſtead of $\left(\frac{D}{\sqrt{2g}\,l\,(a+b)}\right)^2$, or 0,141. This will give us $b = 12{,}192 - 0{,}141$, $= 12{,}051$, differing from the firſt value about $\frac{1}{15}$ of an inch. It is needleſs to carry the approximation further. Thus we ſee that a weir, which dams up the whole of the former current of three feet deep, will only raiſe the waters of this river one foot.

The ſame rule ſerves for ſhowing how high we ought to raiſe this weir in order to produce *any given riſe* of the waters, whether for the purpoſes of navigation, or for taking off a draft to drive mills, or for any other ſervice; for if the breadth of the river remain the ſame, the water will ſtill flow over the weir with nearly the ſame depth. A very ſmall and hardly perceptible difference will indeed ariſe from the diminution of ſlope occaſioned by this riſe, and a conſequent diminution of the velocity with which the river approaches the weir. But this difference muſt always be a ſmall fraction of the ſecond term of our anſwer; which term is itſelf very ſmall: and even this will be compenſated, in ſome degree, by the freer fall which the water will have over the weir.

If the intended weir is not to have the whole breadth of the river (which is ſeldom neceſſary even for the purpoſes of navigation), the waters will be raiſed higher, by the ſame height of the waſteboard. The calculation is preciſely the ſame for this caſe. Only in the ſecond term, which gives the head of water correſponding to the velocity of the river, l muſt ſtill be taken for the whole breadth of the river, while in the firſt term l is the length of the waſteboard. Alſo $\sqrt{2G}$ muſt be a little leſs, on account of the contractions at the ends of the weir, unleſs theſe be avoided by giving the maſonry at the ends of the waſteboard a curved ſhape on the upper ſide of the waſteboard. This ſhould not be done when the ſole object of the weir is to raiſe the ſurface of the waters. Its effect is but trifling at any rate, when the length of the waſtebard is conſiderable, in proportion to the thickneſs of the ſheet of water flowing over it

The following compariſons of this rule with experiment will give our readers ſome notion of its utility.

Diſcharge of the Weir per Second.	Head producing the velocity at the Weir.	Head producing the Velocity above it.	Calculated Height of the River above the Waſteboard.	Obſerved Height.
Inches.	*Inches.*	*Inches.*	*Inches.*	*Inches.*
3888	7,302	0,625	6,677	6,583
2462	5,385	0,350	5,035	4,750
1112	3,171	0,116	3,055	3,166
259	1,201	0,0114	1,189	1,250

It was found extremely difficult to meaſure the exact height of the water in the upper ſtream above the waſteboard. The curvature A I extended ſeveral feet up the ſtream. Indeed there muſt be ſomething arbitrary in this meaſurement, becauſe the ſurface of the ſtream is not horizontal. The deviation ſhould be taken, not from a horizontal plane, but from the inclined ſurface of the river.

It is plain that a river cannot be fitted for continued navigation by WEIRS. Theſe occaſion interruptions; but a few inches may ſometimes be added to the waters of a river by a BAR, which may ſtill allow a flat-bottomed lighter or a raft to paſs over it. This is a very frequent practice in Holland and Flanders; and a very cheap

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cheap and certain conveyance of goods is there obtained by means of ſtreams which we would think no better than boundary ditches, and unfit for every purpoſe of this kind. By means of a bar the water is kept up a very few inches, and the ſtream has free courſe to the ſea. The ſhoot over the bar is prevented by means of another bar placed a little way below it, lying flat in the bottom of the ditch, but which may be raiſed up on hinges. The lighterman makes his boat faſt to a ſtake immediately above the bar, raiſes the lower bar, brings over his boat, again makes it faſt, and, having laid down the other bar again, proceeds on his journey. This contrivance anſwers the end of a lock at a very trifling expence; and though it does not admit of what we are accuſtomed to call navigation, it gives a very ſure conveyance, which would otherwiſe be impoſſible. When the waters can be raiſed by bars, ſo that they may be drawn off for machinery or other purpoſes, they are preferable to weirs, becauſe they do not obſtruct floating with rafts, and are not deſtroyed by the ice.

Prob. III. Given the height of a bar, the depth of water both above and below it, and the width of the river, to determine the diſcharge?

This is by no means ſo eaſily ſolved as the diſcharge over a weir, and we cannot do it with the ſame degree of evidence. We imagine, however, that the following obſervations will not be very far from a true account of the matter.

We may firſt ſuppoſe a reſervoir LFBM (fig. 19.) of ſtagnant water, and that it has a waſteboard of the height CB. We may then determine, by the foregoing problems, the diſcharge through the plane E C. With reſpect to the diſcharge through the part CA, it ſhould be equal to the product of the part of the ſection by the velocity correſponding to the fall EC, which is the difference of the heights of water above and below the bar; for, becauſe the difference of E *a* and C *a* is equal to E C, every particle *a* of water in the plane CA is preſſed in the direction of this ſtream with the ſame force, *viz.* the weight of the column E C. The ſum of theſe diſcharges ſhould be the whole diſcharge over the bar; but ſince the bar is ſet up acroſs a running river, its diſcharge muſt be the ſame with that of the river. The water of the river, when it comes to the place of the bar, has acquired ſome velocity by its ſlope or other cauſes, and this correſponds to ſome height F E. This velocity multiplied by the ſection of the river, having the height E B, ſhould give a diſcharge equal to the diſcharge over the bar.

To avoid this complication of conditions, we may firſt compute the diſcharge of the bar in the manner now pointed out, without the conſideration of the previous velocity of the ſtream. This diſcharge will be a little too ſmall. If we divide it by the ſection F B, it will give a primary velocity too ſmall, but not far from the truth. Therefore we ſhall get the height F E, by means of which we ſhall be able to determine a velocity intermediate between D G and CH, which would correſpond to a weir, as alſo the velocity C H, which correſponds to the part of the ſection C A, which is wholly under water. Then we correct all theſe quantities by repeating the operation with them inſtead of our firſt aſſumptions.

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Mr Buat found this computation extremely near the truth, but in all caſes a little greater than obſervation exhibited.

We may now ſolve the problem in the moſt general terms.

Prob. IV. Given the breadth, depth, and the ſlope of a river, if we confine its paſſage by a bar or weir of a known height and width, to determine the riſe of the waters above the bar.

The ſlope and dimenſions of the channel being given, our formula will give us the velocity and the quantity of water diſcharged. Then, by the preceding problem, find the height of water above the waſteboard. From the ſum of theſe two heights deduct the ordinary depth of the river. The remainder is the riſe of the waters. For example:

Let there be a river whoſe ordinary depth is 3 feet, and breath 40, and whoſe ſlope is $1\frac{1}{2}$ inches in 100 fathoms, or $\frac{1}{4800}$. Suppoſe a weir on this river 6 feet high and 18 feet wide.

We muſt firſt find the velocity and diſcharge of the river in its natural ſtate, we have $l = 480$ inches, $b = 36$, $\frac{I}{s} = \frac{1}{4800}$. Our formula of uniform motion gives $V = 23{,}45$, and $D = 405216$ cubic inches.

The contraction obtains here on the three ſides of the orifice. We may therefore take $\sqrt{2G} = 26{,}1$.—*N. B.* This example is Mr Buat's, and all the meaſures are French. We have alſo *a* (the height of the weir) 72, and $2g = 724$. Therefore the equation $h = \left(\frac{D}{0{,}431\sqrt{2G}l}\right)^{\frac{2}{3}} - \left(\frac{D}{l\sqrt{2g}(a+h)}\right)^2$ becomes 30,182. Add this to the height of the weir, and the depth of the river above the ſluice is 102,182, = 8 feet and 6,182 inches. From this take 3 feet, and there remains 5 feet and 6,182 inches for the riſe of the waters.

There is, however, an important circumſtance in this riſe of the waters, which muſt be diſtinctly underſtood before we can ſay what are the intereſting effects of this weir. This ſwell extends, as we all know, to a conſiderable diſtance up the ſtream, but is leſs ſenſible as we go away from the weir. What is the diſtance to which the ſwell extends, and what increaſe does it produce in the depth at different diſtances from the weir?

If we ſuppoſe that the ſlope and the breadth of the channel remain as before, it is plain, that as we come down the ſtream from that point where the ſwell is inſenſible, the depth of the channel increaſes all the way to the dam. Therefore, as the ſame quantity of water paſſes through every ſection of the river, the velocity muſt diminiſh in the ſame proportion (very nearly) that the ſection increaſes. But this being an open ſtream, and therefore the velocity being inſeparably connected with the ſlope of the ſurface, it follows, that the ſlope of the ſurface muſt diminiſh all the way from that point where the ſwell of the water is inſenſible to the dam. The ſurface, therefore, cannot be a ſimple inclined plane, but muſt be concave upwards, as repreſented in fig. 20. where FKLB repreſents the channel of a river, and FB the ſurface of the water running in it. If this be kept up to A by a weir AL, the ſurface

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will be a curve FIA, touching the natural ſurface F at the beginning of the ſwell, and the line AD which touches it in A will have the ſlope S correſponding to the velocity which the waters have immediately before going over the weir. We know this ſlope, becauſe we are ſuppoſed to know the diſcharge of the river and its ſlope and other circumſtances before barring it with a dam; and we know the height of the dam H, and therefore the new velocity at A, or immediately above A, and conſequently the ſlope S. Therefore, drawing the horizontal lines DC, AG, it is plain that CB and CA will be the primary ſlope of the river, and the ſlope S correſponding to the velocity in the immediate neighbourhood of A, becauſe theſe verticals have the ſame horizontal diſtance DC. We have therefore CB : CA $= S : s$ very nearly, and $S - s : s = CB - CA : CA$, $= AE$ (nearly) : CA. Therefore $CA = \frac{AB \times s}{S - s} = \frac{Hs}{S - s}$. But $DA = CA \times S$, by our definition of ſlope; therefore $DA = \frac{H.S.s}{S - s}$.

This is all that we can ſay with preciſion of this curve. Mr Buat examined what would reſult from ſuppoſing it an arch of a circle. In this caſe we ſhould have DA = DF, and AF very nearly equal to 2 AD: and as we can thus find AD, we get the whole length FIA of the ſwell, and alſo the diſtances of any part of the curve from the primitive ſurface FB of the river; for theſe will be very nearly in the duplicate proportion of their diſtances from F. Thus ID will be $\frac{1}{4}$ of AB, &c. Therefore we ſhould obtain the depth I *d* of the ſtream in that place. Getting the depth of the ſtream, and knowing the diſcharge, we get the velocity, and can compare this with the ſlope of the ſurface at I. This ſhould be the ſlope of that part of the arch of the circle. Making this compariſon, he found theſe circumſtances to be incompatable. He found that the ſection and ſwell at I, correſponding to an arch of a circle, gave a diſcharge nearly $\frac{1}{3}$th too great (they were as 405216 to 492142). Therefore the curve is ſuch, that AD is greater than DF, and that it is more incurvated at F than at A. He found, that making DA to DF as 10 to 9, and the curve FIA an arch of an ellipſe whoſe longer axis was vertical, would give a very nice correſpondence of the ſections, velocities, and ſlopes. The whole extent of the ſwell therefore can never be double of AD, and muſt always greatly ſurpaſs AD; and theſe limits will do very well for every practical queſtion. Therefore making $DF \frac{9}{10}$ of AD, and drawing the chord AD, and making DI $\frac{1}{3}$ of D *i*, we ſhall be very near the truth. Then we get the ſwell with ſufficient preciſion for any point H between F and D, by making $FD^2 : FH^2 = ID : Hb$; and if H is between D and A, we get its diſtance from the tangent DA by a ſimilar proceſs.

It only remains to determine the ſwell produced in the waters of a river by the erection of a bridge or cleaning ſluice which contracts the paſſage. This requires the ſolution of

PROB. V. Given the depth, breadth, and ſlope of a river, to determine the ſwell occaſioned by the piers of a bridge or ſides of a cleaning ſluice, which contract the paſſage by a given quantity, for a given length of channel.

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This ſwell depends on two circumſtances.

1. The whole river muſt paſs through a narrow ſpace, with a velocity proportionably increaſed; and this requires a certain head of water above the bridge.

2. The water, in paſſing the length of the piers with a velocity greater than that correſponding to the primary ſlope of the river, will require a greater ſlope in order to acquire this velocity.

Let V be the velocity of the river before the erection of the bridge, and K the quotient of the width of the river divided by the ſum of the widths between the piers. If the length of the piers, or their dimenſion in the direction of the ſtream, is not very great, KV will nearly expreſs the velocity of the river under the arches; and if we ſuppoſe for a moment the contraction (in the ſenſe hitherto uſed) to be nothing, the height producing this velocity will be $\frac{K^2V^2}{2g}$. But the river will not riſe ſo high, having already a ſlope and velocity before getting under the arches, and the height correſponding to this velocity is $\frac{V^2}{2g}$; therefore the height for producing the augmentation of velocity is $\frac{K^2V^2}{2g} - \frac{V^2}{2g}$. But if we make allowance for contraction, we muſt employ a 2 G leſs than 2 *g*, and we muſt multiply the height now found by $\frac{2g}{2G}$. It will then become $\left(\frac{K^2V^2}{2g} - \frac{V^2}{2g}\right)\frac{2g}{2G}, = \frac{V^2}{2G}(K^2 - 1)$. This is that part of the ſwell which muſt produce the augmentation of velocity.

With reſpect to what is neceſſary for producing the additional ſlope between the piers, let *p* be the natural ſlope of the river (or rather the difference of level in the length of the piers) before the erection of the bridge, and correſponding to the velocity V; K^2p will very nearly expreſs the difference of ſuperficial level for the length of the piers, which is neceſſary for maintaining the velocity KV through the ſame length. The *increaſe* of ſlope therefore is $K^2p - p = p(K^2 - 1)$. Therefore the whole ſwell will be $\left(\frac{V^2}{2G} + p\right)\overline{K^2 - 1}$.

109 Further attention to the ſubject recommended.

THESE are the chief queſtions or problems on this ſubject which occur in the practice of an engineer; and the ſolutions which we have given may in every caſe be depended on as very near the truth, and we are confident that the errors will never amount to one-fifth of the whole quantity. We are equally certain, that of thoſe who call themſelves engineers, and who, without heſitation, undertake jobs of enormous expence, not one in ten is able even to gueſs at the reſult of ſuch operations, unleſs the circumſtances of the caſe happen to coincide with thoſe of ſome other project which he has executed, or has diſtinctly examined; and very few have the ſagacity and penetration neceſſary for appreciating the effects of the diſtinguiſhing circumſtances which yet remain. The ſociety eſtabliſhed for the encouragement

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couragement of arts and manufactures could ſcarcely do a more important ſervice to the public in the line of their inſtitution, that by publiſhing in their Tranſactions a deſcription of every work of this kind executed in the kingdom, with an account of its performance. This would be a moſt valuable collection of experiments and facts. The unlearned practitioner would find among them ſomething which reſembles in its chief circumſtances almoſt any project which could occur to him in his buſineſs, and would tell him what to expect in the caſe under his management: and the intelligent engineer, aſſiſted by mathematical knowledge and the habit of claſſing things together, would frequently be able to frame general rules. To a gentlman qualified as was the Chevalier de Buat, ſuch a collection would be ineſtimable, and might ſuggeſt a theory as far ſuperior to his as he has gone before all other writers.

110 Modes of making ſmall rivers and brooks fit for inland navigation.

We ſhall conclude this article with ſome obſervations on the methods which may be taken for rendering ſmall rivers and brooks fit for inland navigation, or at leaſt for floatage. We get much inſtruction on this ſubject from what has been ſaid concerning the ſwell produced in a river by weirs, bars, or any diminution of its former ſection. Our knowledge of the form which the ſurface of this ſwell affects, will furniſh rules for ſpacing theſe obſtructions in ſuch a manner, and at ſuch diſtances from each other, that the ſwell produced by one ſhall extend to the one above it.

If we know the ſlope, the breadth, and the depth of a river, in the droughts of ſummer, and have determined on the height of the flood-gates, or keeps, which are to be ſet up in its bed, it is evident that their ſtations are not matters of arbitrary choice, if we would derive the greateſt poſſible advantage from them.

Some rivers in Flanders and Italy are made navigable in ſome ſort by ſimple ſluices, which, being ſhut, form magazines of water, which, being diſcharged by opening the gates, raiſes the inferior reach enough to permit the paſſage of the craft which are kept on it. After this momentary riſe the keeps are ſhut again, the water ſinks in the lower reach, and the lighters which were floated though the ſhallows are now obliged to draw into thoſe parts of the reach where they can lie afloat till the next ſupply of water from above enables them to proceed. This is a very rude and imperfect method, and unjuſtifiable at this day, when we know the effect of locks, or at leaſt of double gates. We do not mean to enter on the conſideration of theſe contrivances, and to give the methods of their conſtruction, in this place, but refer our readers to what has been already ſaid on this ſubject in the articles Canal, Lock, Navigation *(Inland)*, and to what will be ſaid in the article *Water-Works*. At preſent we confine ourſelves to the ſingle point of huſbanding the different falls in the bed of the river, in ſuch a manner that there may be everywhere a ſufficient depth of water: and, in what we have to deliver on the ſubject, we ſhall take the form of an example to illuſtrate the application of the foregoing rules.

Suppoſe then a river 40 feet wide and 3 feet deep in the droughts of ſummer, with a ſlope of 1 in 4800. This, by the formula of uniform motion, will have a velocity V = 23½ inches per ſecond, and its diſcharge will be 405216 cubic inches, or 234½ feet. It is propoſed to give this river a depth not leſs than five feet in any place, by means of flood-gates of ſix feet high and 18 feet wide. Practical Inferences.

We firſt compute the height at which this body of 234½ cubic feet of water will diſcharge itſelf over the flood-gates. This we ſhall find by Prob. II. to be 30¼ inches, to which adding 72, the height of the gate, we have 102¼ for the whole height of the water above the floor of the gate; the primitive depth of the river being 3 feet, the riſe or ſwell 5 feet 6¼ inches. In the next place, we find the range or ſenſible extent of this ſwell by Prob. I. and the obſevations which accompany it. This will be found to be nearly 9177 fathoms. Now ſince the primitive depth of the river is three feet there is only wanted two feet of addition; and the queſtion is reduced to the finding what point of the curved ſurface of the ſwell is two feet above the tangent plane at the head of the ſwell? or how far this point is from the gate? The whole extent being 9177 fathoms, and the deviation from the tangent plane being nearly in the duplicate ratio of the diſtances from the point of contact, we may inſtitute this proportion $66\frac{1}{2} : 24 = 9177^2 : 5526^2$. The laſt term is the diſtance (from the head of the ſwell) of that part of the ſurface which is two feet above the primitive ſurface of the river. Therefore 9177—5526, or 3651 fathoms, is the diſtance of this part from the flood-gate; and this is the diſtance at which the gates ſhould be placed from each other. No inconvenience would ariſe from having them nearer, if the banks be high enough to contain the waters; but if they are farther diſtant, the required depth of water cannot be had without increaſing the height of the gates; but if reaſons of conveniency ſhould induce us to place them nearer, the ſame depth may be ſecured by lower gates, and no additional height will be required for the banks. This is generally a matter of moment, becauſe the raiſing the water brings along with it the chance of flooding the adjoining fields. Knowing the place where the ſwell ceaſes to be ſenſible, we can keep the top of the intermediate flood-gate at the preciſe height of the curved ſurface of the ſwell by means of the proportionality of the deviations from the tangent to the diſtances from the point of contact.

But this rule will not do for a gate which is at a greater diſtance from the one above it than the 3651 fathoms already mentioned. We know that a higher gate is required, producing a more extenſive ſwell; and the one ſwell does not coincide with the other, although they may both begin from the ſame point A (fig. 21.) Nor will the curves even be ſimilar, unleſs the thickneſs of the ſheet of water flowing over the gate be increaſed in the ſame ratio. But this is not the caſe; becauſe the produce of the river, and therefore the thickneſs of the ſheet of water, is conſtant.

But we may ſuppoſe them ſimilar without erring more than two or three decimalsof an inch; and then we ſhall have AF : AL = fF : DL; from which, if we take the thickneſs of the ſheet of water already calculated for the other gates, there will remain the height of the gate BL

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By following theſe methods, inſtead of proceeding by random gueſſes, we ſhall procure the greateſt depth of water at the ſmalleſt expence poſſible.

111 But there is a circumſtance which muſt be attended to, and which, if neglected, may in a ſhort time render all our works uſeleſs. Theſe gates muſt frequently be open in the time of freſhes; and as this channel then has its natural ſlope increaſed in every reach by the great contraction of the ſection in the gates, and alſo rolls along a greater body or water, the action of the ſtream on its bed muſt be increaſed by the augmentation of velocity which theſe circumſtances will produce: and although we may ſay that the general ſlope is neceſſarily formed by the cills of the flood-gates, which are paved with ſtone or covered with planks, yet this will not hinder this increaſed current from digging up the bottom in the intervals, undermining the banks, and lodging the mud and earth thus carried off in places where the current meets with any check. All theſe conſequences will aſſuredly follow if the increaſed velocity is greater than what correſponds to the regimen relative to the ſoil in which the river holds on its courſe.

112 Artificial circumſtances, In order therefore to procure durability to works of this kind, which are generally of enormous expence, the local circumſtances muſt be moſt ſcrupulouſly ſtudied. It is not the ordinary hurried ſurvey of an engineer that will free us from the riſk of our navigation becoming very troubleſome by the riſe of the waters being diminiſhed from their former quantity, and banks formed at a ſmall diſtance below every ſluice. We muſt attentively ſtudy the nature of the ſoil, and diſcover experimentally the velocity which is not inconſiſtent with the permanency of the channel. If this be not a great deal leſs than that of the river when accelerated by freſhes, the regimen may be preſerved after the eſtabliſhment of the gate, and no great changes in the channel will be neceſſary: but if, on the other hand, the natural velocity of the river during its freſhes greatly exceeds what is conſiſtent with ſtability, we muſt enlarge the width of the channel, that we may diminiſh the hydraulic mean depth, and along with this the velocity. Therefore, knowing the quantity diſcharged during the freſhes, divide it by the velocity of regimen, or rather by a velocity ſomewhat greater (for a reaſon which will appear by and by), the quotient will be the area of a new ſection. Then taking the natural ſlope of the river for the ſlope which it will preſerve in this enlarged channel, and after the cills of the flood-gates have been fixed, we muſt calculate the hydraulic mean depth, and then the other dimenſions of the channel. And, laſtly, from the known dimenſions of the channel and the diſcharge (which we muſt now compute), we proceed to calculate the height and the diſtances of the flood-gates, adjuſted to their widths, which muſt be regulated by the room which may be thought proper for the free paſſage of the lighters which are to ply on the river. An example will illuſtrate the whole of this proceſs.

113 Illuſtrated by an example. Suppoſe then a ſmall river having a ſlope of 2 inches in 100 fathoms or $\frac{1}{1800}$ which is a very uſual declivity of ſuch ſmall ſtreams, and whoſe depth in ſummer is 2 feet, but ſubject to floods which raiſe it to nine feet. Let its breadth at the bottom be 18 feet, and the baſe of its ſlanting ſides $\frac{1}{4}$ of their height. All of theſe dimenſions are very conformable to the ordinary courſe of things. It is propoſed to make this river navigable in all ſeaſons by means of keeps and gates placed at proper diſtances; and we want to know the dimenſions of a channel which will be permanent, in a ſoil which begins to yield to a velocity of 80 inches per ſecond, but will be ſafe under a velocity of 24.

The primitive channel having the properties of a rectangular channel, its breadth during the freſhes muſt be B = 30 feet, or 360 inches, and its depth h 9 feet or 108 inches; therefore its hydraulic mean depth $d = \frac{B\,h}{B + 2\,h} = 61{,}88$ inches. Its real velocity therefore, during the freſhes, will be 38,9447 inches, and its diſcharge 1514169 cubic inches, or 876¼ cubic feet per ſecond. We ſee therefore that the natural channel will not be permanent, and will be very quickly deſtroyed or changed by this great velocity. We have two methods for procuring ſtability, viz. diminiſhing the ſlope, or widening the bed. The firſt method will require the courſe to be lengthened in the proportion of 24^2 to 3988^2, or nearly of 36 to 100. The expence of this would be enormous. The ſecond method will require the hydraulic mean depth to be increaſed nearly in the ſame proportion (becauſe the velocities are nearly as $\frac{\sqrt{d}}{\sqrt{s}}$). This will evidently be much leſs coſtly, and, even to procure convenient room for the navigation, muſt be preferred.

We muſt now obſerve, that the great velocity, of which we are afraid, obtains only during the winter floods. If therefore we reduce this to 24 inches, it muſt happen that the autumnal freſhes, loaded with ſand and mud, will certainly depoſit a part of it, and choak up our channel below the flood-gates. We muſt therefore ſelect a mean velocity ſomewhat exceeding the regimen, that it may carry off theſe depoſitions. We ſhall take 27 inches, which will produce this effect on the looſe mud without endangering our channel in any remarkable degree.

Therefore we have, by the theorem for uniform motion, $V = 27, = \frac{297(\sqrt{d} - 0{,}1)}{\sqrt{s} - L\sqrt{s} + 1{,}6} - 0{,}3(\sqrt{s} - 0{,}1)$. Calculating the diviſor of this formula, we find it = 55,884. Hence $\sqrt{d} - 0{,}1 = \frac{27 \text{ inch.}}{\frac{297}{55{,}884} - 0{,}3} =$ 5,3843, and therefore $d = 30\frac{5}{12}$. Having thus determined the hydraulic mean depth, we find the area S of the ſection by dividing the diſcharge 1514169 by the velocity 27. This gives us 56080,368. Then we get the breadth B by the formula formerly given, $B = \sqrt{\left(\frac{S}{2d}\right)^2 - 2S} + \frac{S}{2d}$, = 1802,296 inches, or 150,19 feet, and the depth h = 31,115 inches.

With theſe dimenſions of the ſection we are certain that the channel will be permanent; and the cills of the flood-gates being all fixed agreeable to the primitive

ſlope,

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slope, we need not fear that it will be changed in the intervals by the action of the current. The gates being all open during the freshes, the bottom will be cleared of all deposited mud.

114 Station of the flood-gates, &c.

We must now station the flood-gates along the new channel, at such distances that we may have the depth of water which is proper for the lighters that are to be employed in the navigation. Suppose this to be four feet. We must first of all learn how high the water will be kept in this new channel during the summer droughts. There remained in the primitive channel only 2 feet, and the section in this case had 20 feet 8 inches mean width; and the discharge corresponding to this section and slope of $\frac{1}{7680}$ is, by the theorem of uniform motion, 130,849 cubic inches per second. To find the depth of water in the new channel corresponding to this discharge, and the same slope, we must take the method of approximation formerly exemplified, remembering that the discharge D is 130849, and the breadth B is 1760,8 at the bottom (the slant sides being $\frac{3}{4}$). These data will produce a depth of water $=6\frac{1}{3}$ inches. To obtain four feet therefore behind any of the flood-gates, we must have a swell of $41\frac{2}{3}$ inches produced by the gate below.

We must now determine the width of passage which must be given at the gates. This will regulate the thickness of the sheet of water which flows over them when shut; and this, with the height of the gate, fixes the swell at the gate. The extent of this swell, and the elevation of every point of its curved surface above the new surface of the river, requires a combination of the height of swell at the flood-gate, with the primitive slope and the new velocity. These being computed, the stations of the gates may be assigned, which will secure four feet of water behind each in summer. We need not give these computations, having already exemplified them all with relation to another river.

This example not only illustrates the method of proceeding, so as to be ensured of success, but also gives us a precise instance of what must be done in a case which cannot but frequently occur. We see what a prodigious excavation is necessary, in order to obtain permanency. We have been obliged to enlarge the primitive bed to about thrice its former size, so that the excavation is at least two-thirds of what the other method required. The expence, however, will still be vastly inferior to the other, both from the nature of the work and the quantity of ground occupied. At all events, the expence is enormous, and what could never be repaid by the navigation, except in a very rich and populous country.

There is another circumstance to be attended to.—The navigation of this river by sluices must be very desultory, unless they are extremely numerous, and of small heights. The natural surface of the swell being concave upwards, the additions made by its different parts to the primitive height of the river decrease rapidly as they approach to the place A (fig. 20), where the swell terminates; and three gates, each of which raises the water one foot when placed at the proper distance from each other, will raise the water much more than two gates at twice this distance, each raising the water two feet. Moreover, when the elevation produced by a flood-gate is considerable, exceeding a very few inches, the fall and current produced by the opening of the gate is such, that no boat can possibly pass up the river, and it runs imminent risk of being overset and sunk, in the attempt to go down the stream. This renders the navigation desultory. A number of lighters collect themselves at the gates, and wait their opening. They pass through as soon as the current becomes moderate. This would not, perhaps be very hurtful in a regulated navigation, if they could then proceed on their voyage. But the boats bound up the river must stay on the upper side of the gate which they have just now passed, because the channel is now too shallow for them to proceed. Those bound down the river can only go to the next gate, unless it has been opened at a time nicely adjusted to the opening of the one above it. The passage downwards *may*, in many cases, be continued, by very intelligent and attentive lockmen, but the passage up *must* be exceedingly tedious. Nay, we may say, that *while* the passage downwards is continuous, it is but in a very few cases that the passage upwards is practicable. If we add to these inconveniencies the great danger of passage during the freshes, while all the gates are open, and the immense and unavoidable accumulations of ice, on occasion even of slight frosts, we may see that this method of procuring an inland navigation is amazingly expensive, desultory, tedious, and hazardous. It did not therefore merit, on its own account, the attention we have bestowed on it. But the discussion was absolutely necessary, in order to show what must be done in order to obtain effect and permanency, and thus to prevent us from engaging in a project which, to a person not duly and confidently informed, is so feasible and promising. Many professional engineers are ready, and with honest intentions, to undertake such tasks; and by avoiding this immense expence, and contenting themselves with a much narrower channel, they succeed, (witness the old navigation of the river Mersey). But the work has no duration; and, not having been found very serviceable, its cessation is not matter of much regret. The work is not much spoken of during its continuance. It is soon forgotten, as well as its failure, and engineers are found ready to engage for such another.

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115 Introduction of locks.

It was not a very refined thought to change this imperfect mode for another free from most of its inconveniencies. A boat was brought up the river, through one of these gates, only by raising the waters of the inferior reach, and depressing those of the upper: and it could not escape observation, that when the gates were far asunder, a vast body of water must be discharged before this could be done, and that it would be a great improvement to double each gate, with a very small distance between. Thus a very small quantity of water would fill the interval to the desired height, and allow the boat to come through; and this thought was the more obvious, from a similar practice having preceded it, viz. that of navigating a small river by means of double bars, the lowest of which lay flat in the bottom of the river, but could be raised up on hinges. We have mentioned this already; and it appears to have been an old practice, being mentioned by Stevinus in his valuable work

on

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on ſluices, published about the beginning of the laſt century; yet no trace of this method is to be found of much older dates. It occurred, however, accidentally, pretty often in the flat countries of Holland and Flanders, which being the ſeat of frequent wars, almoſt every town and village was furniſhed with wet ditches, connected with the adjoining rivers. Stevinus mentions particularly the weirs of Condé, as having been long employed, with great ingenuity, for rendering navigable a very long ſtretch of the Scheldt. The boats were received into the lower part of the foſſee, which was ſeparated from the reſt by a ſtone butardeau, ſerving to keep up the waters in the reſt of the foſſee about eight feet. In this was a ſluice and another dam, by which the boats could be taken into the upper foſſee, which communicated with a remote part of the Scheldt by a long canal. This appears to be one of the earlieſt locks.

In the firſt attempt to introduce this improvement in the navigation of rivers already kept up by weirs, which gave a partial and interrupted navigation, it was uſual to avoid the great expence of the ſecond dam and gate, by making the lock altogether detached from the river, within land, and having its baſon parallel to the river, and communicating by one end with the river above the weir, and by the other end with the river below the weir, and having a flood gate at each end.—This was a moſt ingenious thought; and it was a prodigious improvement, free from all the inconveniences of currents, ice, &c. &c. It was called a *Schluſſel*, or lock, with conſiderable propriety; and this was the origin of the word *ſluice*, and of our application of its tranſlation *lock*. This practice being once introduced, it was not long before engineers found that a complete ſeparation of the navigation from the bed of the river was not only the moſt perfect method for obtaining a ſure, eaſy, and uninterrupted navigation, but that it was in general the moſt œconomical in its firſt conſtruction, and ſubject to no riſk of deterioration by the action of the current, which was here entirely removed. Locked canals, therefore, have almoſt entirely ſupplanted all attempts to improve the natural beds of rivers; and this is hardly ever attempted except in the flat countries, where they can hardly be ſaid to differ from horizontal canals. We therefore cloſe with theſe obſervations this article, and reſerve what is yet to be ſaid on the conſtructoin of canals and locks for the article *Water Works*.

116 Concluding obſervations to the reader.

We beg leave, however, to detain the reader for a few moments. He cannot but have obſerved our anxiety to render this diſſertation worthy of his notice, by making it practically uſeful. We have on every occaſion appealed, from all theoretical deductions, however ſpecious and well ſupported, to fact and obſervation of thoſe ſpontaneous phenomena of nature which are continually paſſing in review before us in the motion of running waters. Reſting in this manner our whole doctrines on experiment, on the obſervation of what really happens, and what happens in a way which we cannot or do not fully explain, theſe ſpontaneous operations of nature came inſenſibly to acquire a particular value in our imagination. It has alſo happened in the courſe of our reflections on theſe ſubjects, that theſe phænomena have frequently preſented themſelves to our view in groups, not leſs remarkable for the extent and the importance of their conſequences than for the ſimplicity, and frequently the ſeeming inſignificancy, nay frivolity, of the means employed. Our fancy has therefore been ſometimes warmed with the view of a ſomething; an

Deus agitans molem, et magno ſe corpore miſcens.

This has ſometimes made us expreſs ourſelves in a way that is ſuſceptible of miſinterpretation, and may even lead into a miſtake of our meaning.

We therefore find ourſelves obliged to declare, that by the term NATURE, which we have ſo frequently uſed *con amore*, we do not mean that indeſcribable idol which the ſelf-conceit and vanity of certain would-be philoſophers have ſet up of late, and oſtentatiouſly ſtand on tiptoe to worſhip. This *ens rationis*, this creature of the imagination, has long been the object of cool contemplation in the cloſet of the philoſopher, and has ſhared his attention with many other play-things of his ever-working fancy. But the more the works of NATURE are inveſtigated by thoſe who alone deſerve the name of true philoſophers, the more evidently will they be diſcovered to be not the chance fragments of a fatal chaos, but the beautiful productions of a wonderful Artiſt, and the darling objects of his care: and we perſuade ourſelves that many thouſands are ready to rally under the banners of true religion and ſound philoſophy, and to follow the ſteps of a Clarke, a Butler, a Newton, and a Boyle, who ſo eminently diſtinguiſhed themſelves in the cauſe of Nature's God.

By NATURE, then we mean that admirable ſyſtem of general laws, by which the adored Author and Governor of the univerſe has thought fit to connect the various parts of this wonderful and goodly frame of things, and to regulate all their operations.

We are not afraid of continually appealing to the laws of nature; and as we have already obſerved in the article PHILOSOPHY, we conſider theſe general laws as the moſt magnificent diſplays of Infinite Wiſdom, and the contemplation of them as the moſt cheering employment of our underſtandings.

Igneus eſt illis vigor et cœleſtis origo
Seminibus.

At the ſame time we deſpiſe the cold-hearted philoſopher who ſtops ſhort here and is ſatisfied (perhaps inwardly pleaſed) that he has completely accounted for every thing by the laws of unchanging nature; and we ſuſpect that this philoſopher would analyſe with the ſame frigid ingenuity, and explain by irreſiſtible στοργη, the tender attachment of her whoſe breaſt he ſucked, and who by many anxious and ſleepleſs nights preſerved alive the puling infant. But let us rather liſten to the words of him who was the moſt ſagacious obſerver and the moſt faithful interpreter of nature's laws, the illuſtrious Sir Iſaac Newton. He ſays,

"Elegantiſſima hæcce rerum compages non niſi, conſilio et *dominio* entis ſapientiſſimi et potentiſſimi oriri potuit. Omnia, ſimili conſtructa conſilio, ſuberunt *unius* dominio. Hic omnia regit, non ut *anima mundi*, ſed ut univerſorum dominus. Propter dominium ſuum dominus deus,

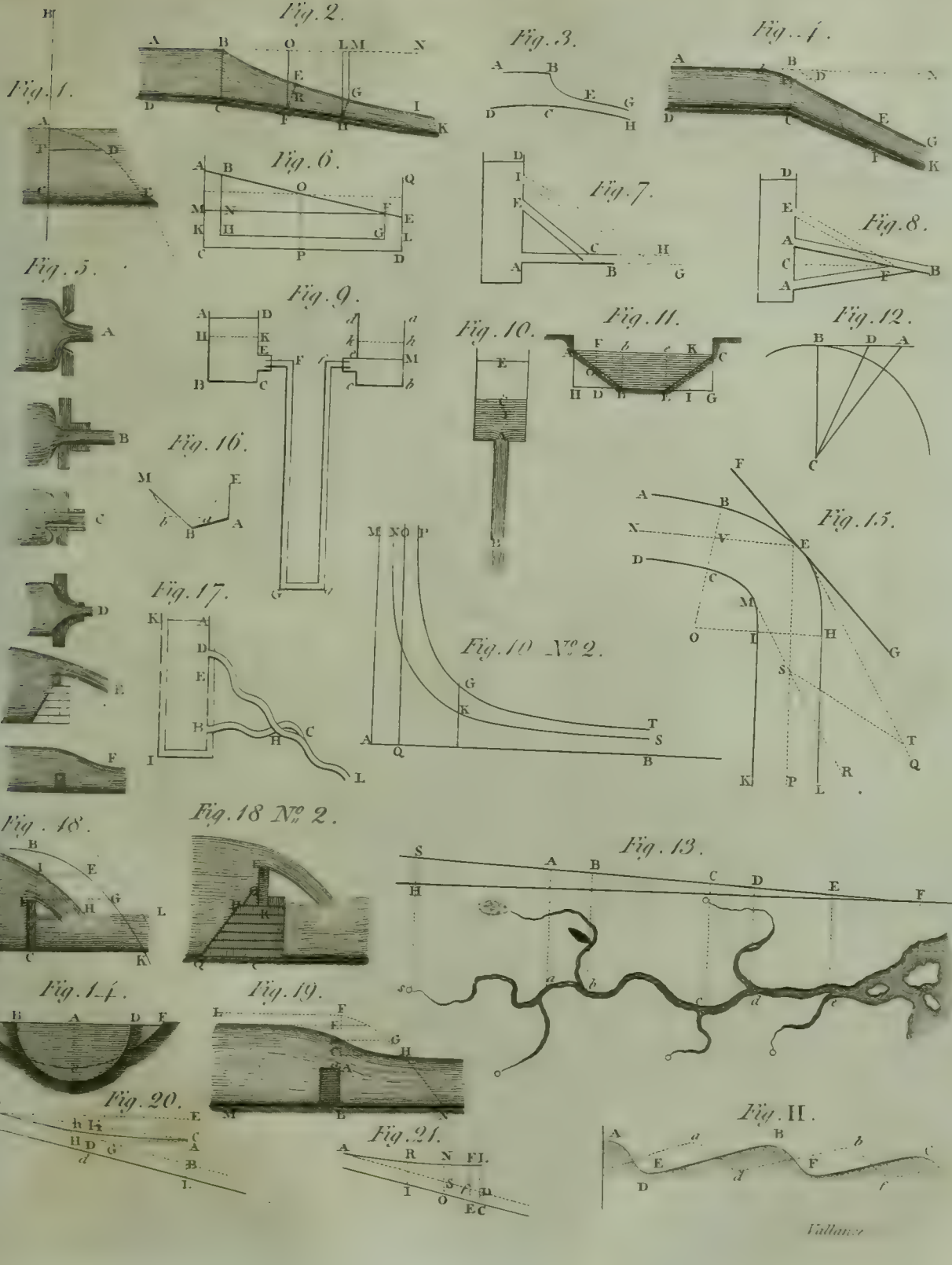
Fig. 1.
Fig. 2.
Fig. 3.
Fig. 4.
Fig. 5.
Fig. 6.
Fig. 7.
Fig. 8.
Fig. 9.
Fig. 10.
Fig. 11.
Fig. 12.
Fig. 13.
Fig. 14.
Fig. 15.
Fig. 16.
Fig. 17.
Fig. 18.
Fig. 18 No 2.
Fig. 19.
Fig. 20.
Fig. 21.
Fig. 10 No 2.
Fig. II.
Vallance

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deus, παντοκρατὼρ nuncupatur. Deus ad ſervientes reſpicit, et *deitas* eſt dominatio dei, non in corpus proprium, uti centiunt quibus deus eſt natura ſeu anima mundi, ſed in ſervos. Deus ſummus eſt ens eternum, infinitum, abſolute perfectum. Ens utcunque perfectum, at ſine dominio, non eſt dominus deus.

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" Hunc cognoſcimus, ſolummodo per proprietates ejus et attributa. Attribuuntur ut ex phenomenis dignoſcuntur. Phenomena ſunt ſapientiſſimæ et optimæ rerum ſtructuræ, atque cauſæ finales.—Hunc admiramur ob perfectiones; hunc veneramur et colimus ob dominium" (B).

River-

(B) Our readers will probably be pleaſed with the following liſt of authors who have treated profeſſedly of the motions of rivers: Guglielmini *De Fluviis et Caſtellis Aquarum—Danubius Illuſtratus*; Grandi *De Caſtellis;* Zendrini *De Motu Aquarum;* Friſius *De Fluviis;* Lecchi *Idroſtotica i Idraulica;* Michelotti *Spereinze Idrauliche;* Beldior's *Architecture Hydraulique;* Boſſut *Hydrodynamique;* Buat *Hydraulique;* Silberſchlag *Theorie des Fleuves; Lettres de* M. L'Epinaſſe *au P. Friſi touchant ſa Theorie des Fleuves; Tableau des principales Rivieres du Monde, par* Genetté; Stevins *ſur les Ecluſes, Traité des Ecluſes; par* Boulard, *qui a remporté le Prix de l'Acad. de Lyons;* Bleiſwyck *Diſſertatio de Aggeribus;* Boſſut *et* Viallet *ſur la Conſtruction des Digues;* Stevin *Hydroſtatica;* Tielman van der Horſt *Theatrum Machinarum Univerſale;* De la Lande *ſur les Canaux de Navigation;* Racolta di Autori *chi Trattano del Moto dell' Aque,* 3 tom. 4to, Firenza 1723.—This moſt valuable collection contains the writings of Archimedes, Albizi, Galileo, Caſtelli, Michelini, Borelli, Montanari, Viviani, Caſſini, Guglielmini, Grandi, Manfredi, Picard, and Narduci; and an account of the numberleſs works which have been carried on in the embankment of the Po.

River. *River-Water.* This is generally much ſofter and better accommodated to economical purpoſes than ſpring-water. For though rivers proceed originally from ſprings, yet, by their rapid motion, and by being expoſed during a long courſe to the influence of the ſun and air, the earthy and metallic ſalts which they contain are decompoſed, the acid flies off, and the terreſtrial parts precipitate to the bottom. Rivers are alſo rendered ſofter by the vaſt quantity of rain-water, which, paſſing along the ſurface of the earth, is conveyed into their channels. But all rivers carry with them a great deal of mud and other impurities; and, when they flow near large and populous towns, they become impregnated with a number of heterogeneous ſubſtances, in which ſtate the water is certainly unfit for the purpoſes of life; yet, by remaining for ſome time at reſt, all the feculencies ſubſide, and the water becomes ſufficiently pure and potable.

RIVERS (Earl). See Wodevile.

RIVINIA, in botany: A genus of the monogynia order, belonging to the tetrandria claſs of plants.—The perianth is four-leaved, coloured, and permanent, the leaflet oblong-egged and obtuſe; there is no corolla, unleſs the calyx be conſidered as ſuch. There are four or eight filaments, ſhorter than the calyx, approaching by pairs, permanent; the anthers are ſmall. The germ is large and roundiſh; the ſtyle very ſhort; the ſtigma ſimple and obtuſe. The berry is globular, ſitting on the green reflected calyx, one-celled with an incurved point. There is one ſeed, lensform and rugged. This plant is called *Solonoides* by Tournefort, and *Piercea* by Miller. It grows naturally in moſt of the iſlands of the Weſt Indies. The juice of the berries of the plant will ſtain paper and linen of a bright red colour, and many experiments made with it to colour flowers have ſucceeded extremely well in the following manner: the juice of the berries was preſſed out, and mixed with common water, putting it into a phial, ſhaking it well together for ſome time, till the water was thoroughly tinged; then the flowers, which were white and juſt fully blown, were cut off, and their ſtalks placed into the phial; and in one night the flowers have been finely variegated with red; the flowers on which the experiments were made were the tuberoſe, and the double white narciſſus.

RIVULET, a diminutive of river. See River.

ROACH, in ichthyology. See Cyprinus.

ROAD, an open way, or public paſſage, forming a communication between one place and another.

Of all the people in the world the Romans took the moſt pains in forming roads; and the labour and expences they were at in rendering them ſpacious, firm, ſtraight, and ſmooth, are incredible. They uſually ſtrengthened the ground by ramming it, laying it with flints, pebbles, or ſands, and ſometimes with a lining of maſonry, rubbiſh, bricks, &c. bound together with mortar. In ſome places in the Lionois, F. Meneſtrier obſerves, that he has found huge clutters of flints cemented with lime, reaching 10 or 12 feet deep, and making a maſs as hard and compact as marble; and which, after reſiſting the injuries of time for 1600 years, is ſtill ſcarce penetrable by all the force of hammers, mattocks, &c. and yet the flints it conſiſts of are not bigger than eggs. The moſt noble of the Roman roads were the Via Appia, which was carried to ſuch a vaſt length, that Procopius reckons it five days journey to the end of it, and Leipſius computes it at 350 miles: it is 12 feet broad, and made of ſquare free-ſtone generally a foot and a half on each ſide; and though this has laſted for above 1800 years, yet in many places it is for ſeveral miles together as entire as when it was firſt made. Road, Roan.

The ancient roads are diſtinguiſhed into military roads, double roads, ſubterraneous roads, &c. The military roads where grand roads, formed by the Romans for marching their armies into the provinces of the empire; the principal of theſe Roman roads in England are Watling-ſtreet, Ikenild-ſtreet, Foſs-way, and Erminage-ſtreet. Double roads among the Romans, were roads for carriages, with two pavements, the one for thoſe going one way, and the other for thoſe returning the other: theſe were ſeparated from each other by a cauſeway raiſed in the middle, paved with bricks, for the conveniency of foot paſſengers; with borders and mounting ſtones from ſpace to ſpace, and military columns to mark the diſtance. Subterraneous roads are thoſe dug through a rock, and left vaulted; as that of Puzzuoli near Naples, which is near half a league long, and is 15 feet broad and as many high.

The firſt law enacted reſpecting highways and roads in England was in the year 1285; when the lords of the ſoil were enjoined to enlarge thoſe *ways* where buſhes, woods, or ditches be, in order to prevent robberies. The next law was made by Edward III. in the year 1346; when a commiſſion was granted by the king to lay a toll on all ſorts of carriages paſſing from the hoſpital of St Giles in the fields to the bar of the Old Temple, and alſo through another highway called *Portpool* (now Gray's Inn Lane) joined to the before-named highway; which roads were become almoſt impaſſable. Little further relating to this ſubject occurs, till the reign of Henry VIII. when the pariſhes were entruſted with the care of the roads, and ſurveyors were annually elected to take care of them. But the increaſe of luxury and commerce introduced ſuch a number of heavy carriages for the conveyance of goods, and lighter ones for the convenience and eaſe of travelling, that pariſh aid was found inſufficient to keep the beſt frequented roads in repair. This introduced toll-gates or turnpikes; that ſomething might be paid towards their ſupport by every individual who enjoyed the benefit of theſe improvements, by paſſing over the roads.

Speaking of roads, the Abbé Raynal juſtly remarks. "Let us travel over all the countries of the earth, and wherever we ſhall find no facility of trading from a city to a town, and from a village to a hamlet, we may pronounce the people to be barbarians; and we ſhall only be deceived reſpecting the degree of barbariſm."

Road, in navigation, a bay, or place of anchorage, at ſome diſtance from the ſhore, whither ſhips or veſſels occaſionally repair to receive intelligence, orders, or neceſſary ſupplies; or to wait for a fair wind, &c. The excellence of a road conſiſts chiefly in its being protected from the reigning winds and the ſwell of the ſea; in having a good anchoring-ground, and being at a competent diſtance from the ſhore. Thoſe which are not ſufficiently incloſed are termed *open roads*.

Roan, in the manage: A *roan* horſe is one of a bay,

Roanoak ‖ Robbery.

bay, ſorrel, or black colour, with grey or white ſpots interſperſed very thick. When this party-coloured coat is accompanied with a black head and black extremities, he is called a *roan horſe with a black-a-moor's head:* and if the ſame mixture is predominant upon a deep ſorrel, he is called *claret-roan.*

ROANOAK, an iſland of North America, near the coaſt of North Carolina. Here the Engliſh firſt attempted to ſettle in 1585, but were obliged to leave it for want of proviſions. E. Long. 75. 0. N. Lat. 35. 40.

Roanoak, a river of North America, which riſes in Virginia, runs through Carolina, and at length falls into the ſea, where it forms a long narrow bay called *Albemarle ſound.*

ROASTING, in metallurgic operations, ſignifies the diſſipation of the volatile parts of an ore by heat. See Metallurgy, *paſſim.*

ROB, in pharmacy, the juices of fruits purified and inſpiſſated till they are of the conſiſtence of honey.

ROBBERY, the *rapina* of the civilians, is the felonious and forcible taking, from the perſon of another, of goods or money to any value, by violence or putting him in fear. 1. There muſt be a taking, otherwiſe it is no robbery. A mere attempt to rob was indeed held to be felony ſo late as Henry IVth's time; but afterwards it was taken to be only a miſdemeanour, and puniſhable with fine and impriſonment; till the ſtatute 7 Geo. II. c. 21. which makes it a felony (tranſportable for ſeven years) unlawfully and maliciouſly to aſſault another, with any offenſive weapon or inſtrument;—or by menaces, or by other forcible or violent manner, to demand any money or goods;—with a felonious intent to rob. If the thief, having once taken a purſe, returns it, ſtill it is a robbery: and ſo it is whether the taking be ſtrictly from the perſon of another, or in his preſence only; as where a robber by menaces and violence puts a man in fear, and drives away his ſheep or his cattle before his face. 2. It is immaterial of what value the thing taken is: a penny, as well as a pound thus forcibly extorted, makes a robbery. 3. Laſtly, the taking muſt be by force, or a previous putting in fear; which makes the violation of the perſon more atrocious than privately ſtealing. For, according to the maxim of the civil law, "*qui vi rapuit, fur improbior eſſe videtur.*" This previous violence, or putting in fear, is the criterion that diſtinguiſhes robbery from other larcenies. For if one privately ſteals ſixpence from the perſon of another, and afterwards keeps it by putting him in fear, this is no robbery, for the fear is ſubſequent; neither is it capital as privately ſtealing, being under the value of twelvepence. Not that it is indeed neceſſary, though uſual, to lay in the indictment that the robbery was committed by *putting in fear:* it is ſufficient, if laid to be done by *violence.* And when it is laid to be done by putting in fear, this does not imply any great degree of terror or affright in the party robbed: it is enough that ſo much force or threatening, by word or geſture, be uſed, as might create an apprehenſion of danger, or induce a man to part with his property without or againſt his conſent. Thus, if a man be knocked down without previous warning, and ſtripped of his property while ſenſeleſs, though ſtrictly he cannot be ſaid to be *put in fear,* yet this is undoubtedly a robbery. Or, if a perſon with a ſword drawn begs an alms, and I give it him through miſtruſt and apprehenſion of violence, this is a felonious robbery. So if, under a pretence of ſale, a man forcibly extorts money from another, neither ſhall this ſubterfuge avail him. But it is doubted, whether the forcing a higler, or other chapman, to ſell his wares, and giving him the full value of them, amounts to ſo heinous a crime as robbery.

Robert.

This ſpecies of Larceny is debarred of the benefit of clergy by ſtatute 23 Hen. VIII. c. 1. and other ſubſequent ſtatutes; not indeed in general, but only when committed in a dwelling-houſe, or in or near the king's highway. A robbery therefore in a diſtant field, or footpath, was not puniſhed with death; but was open to the benefit of clergy, till the ſtatute 3 & 4 W. and M. c. 9. which takes away clergy from both principals and acceſſories before the fact, in robbery, whereſoever committed. See Law, N° clxxxvi. 30.

ROBERT Bruce, king of Scotland, in 1306; a renowned general, and the deliverer of his country from a ſtate of vaſſalage to the Engliſh. See Scotland.

Robert, king of France, ſurnamed the Wiſe and the Pious, came to the crown in 996, after the death of Hugh Capet his father. He was crowned at Orleans, the place of his nativity, and afterwards at Rheims, after the impriſonment of Charles of Lorraine. He married Bertha his couſin, daughter of Conrad king of Burgundy; but the marriage was declared null by Gregory V.; and the king, if we can give credit to cardinal Peter Damien, was excommunicated. This anathema made ſuch a noiſe in France, that all the king's courteſans, and even his very domeſtics, went away from him. Only two continued with him; who were ſo deeply impreſſed with a ſenſe of horror at whatever the king touched, that they purified it with fire: this ſcruple they carried ſo far, as to the very plates on which he was ſerved with his meat, and the veſſels out of which he drank. The ſame cardinal reports, that as a puniſhment for this pretended inceſt, the queen was delivered of a monſter, which had the head and neck of a duck. He adds, that Robert was ſo ſtruck with aſtoniſhment at this ſpecies of prodigy, that he lived apart from the queen. He contracted a ſecond marriage with Conſtance, daughter of William count of Arles and Provence; but the arrogant diſpoſition of this princeſs would have totally overturned the kingdom, and thrown it into confuſion, had not the wiſdom of the king prevented her from intermeddling with the affairs of the ſtate. He carefully concealed from her whatever acts of liberality he ſhowed to any of his domeſtics. "Take care (ſaid he to them) that the queen don't perceive it."—Henry duke of Burgundy, brother of Hugh Capet, dying in 1002, without lawful iſſue, left his dukedom to his nephew the king of France. Robert inveſted his ſecond ſon Henry with this dukedom, who afterwards coming to the crown, reſigned it in favour of Robert his cadet. This duke Robert was chief of the firſt royal branch of the dukes of Burgundy, who flouriſhed till 1361. This dukedom was then re-united to the crown by king John, who gave it to his fourth ſon Philip the Bold, chief of the ſecond houſe of Burgundy, which was terminated in the perſon of Charles the Rath, who was ſlain in 1477. King Robert was ſo much eſteemed for his wiſdom and prudence, that he

Robert

[illegible] Henry (for [illegible] and his [illegible] Lady, which, [illegible] to escape. Hugh, called the Great, [illegible] by Constantine, king [illegible] [illegible] Henry I. [illegible] Rheims. He died at Melun, July 24, [illegible] the age of 60. Robert, [illegible] according to the [illegible] of the times, a wise prince. Helgaud, [illegible] Henry, relates, in his life of him, that, to prevent his subjects from falling into the crime of perjury, and incurring the penalties which followed thereon, he made them swear upon a throne from which the relics had been previously removed, as if intending that their conscience perjured [illegible] [illegible] [illegible] was adopted. Robert built a great number of churches, and restored a revenue to the clergy of the tithes and wealth which the laylords had made themselves masters of. The depredations were such, that the laity possessed the ecclesiastical [illegible] by hereditary title; they divided them among their children; they even gave benefices as a dowry with their daughters, or left them to their sons as lawful inheritance. Although Robert was pious, and although he reverenced the clergy, yet it was evident that he opposed the bishops with a firmness and resolution of which, for many ages, they had had no examples. Lutheric archbishop of Sens had introduced into his diocese the custom of proving by the eucharist persons accused as guilty of any crime. The king wrote to him in the following strong terms: "I swear (says he) by the faith I owe to God, that if you do not put a stop to the gross abuse complained of, you shall be deprived of your priesthood." The prelate was forced to comply. He punished in 1022, the Manichæens, canons of Orleans, by burning them at the stake. There are, however, recorded of him some less severe actions, which it is right to mention. A dangerous conspiracy against his person and government having been discovered, and the authors taken into custody, he seized the moment when their judges had met to sentence them to death, to cause an elegant repast to be served up to them. Next day they were admitted to the eucharist. Then Robert told them, that he gave them their pardon, "because none of those can die whom Jesus Christ came to receive at his table." One day when he was at prayers in the chapel, he perceived a thief, who had cut off the half of the fringe of his mantle, proceeding to take the remainder; "Friend (says he with a pleasant countenance), be content with what you have already taken, the rest will very well serve some other." Robert cultivated, and was a patronizer of the sciences. There are several hymns wrote by him, which still continue to be sung in the church. His reign was happy and tranquil. According to some authors, he instituted the order of the Star, commonly attributed to king John.

Robert of France, second son of Louis VIII. and brother to St Louis, who erected in his favour Artois [illegible] royal peerage in the year 1237. It was during this time that the unlucky difference between pope Gregory IX. and the emperor Frederic II. took place. Gregory offered to St Louis the empire for Robert; but the French nobility, having met to deliberate on this proposal, were of opinion that he ought to reject it. He gave the pope for answer: "That Count Robert esteemed himself sufficiently honoured by being the brother of a king, who [illegible] in dignity, in [illegible] was [illegible] in birth, all other monarchs in the world." Robert accompanied St Louis into Egypt, and fought with more bravery than prudence at the battle of Massoure, on the 9th of February 1250. In his pursuit of the cowards through a certain small village, he was killed by stones, sticks, and other things which they threw at him from the windows. He was an intrepid prince, but too passionate, dogmatical, and quarrelsome.

Robert II. *Count of Artois*, son of the preceding, surnamed the Good and the Noble, was at the expedition into Africa in 1270. He drove the rebels from Navarre in 1276. He brought a very powerful assistance to Charles I. king of Naples, of which kingdom he was regent during the captivity of Charles II. He defeated the Arragonians in Sicily in 1289, the English near Bayonne in 1296, and the Flemish at Furnes in 1298. But having in 1302 imprudently attempted to force these last, when encamped near Courtray, he received no less than 30 wounds; and in that expedition lost both his honour and his life. He was a brave, but passionate and fierce man, and good at nothing but pugilistic encounters. Mahaud his daughter inherited the dukedom of Artois, and gave herself in marriage to Otho duke of Burgundy, by whom she had two daughters, Jane wife of Philip the Long, and Blanche wife of Charles the Fair. In the mean time Philip, son of Robert II. had a son.

Robert III. who disputed the dukedom of Artois with Mahaud his aunt; but he lost his suit by two sentences given in against him in 1302 and 1318. He wished to revive the process in 1329, under Philip of Valois, by means of pretended new titles, which were found to be false. Robert was condemned the third time, and banished the kingdom in 1331. Having found an asylum with Edward III. king of England, he undertook to declare him king of France; which proved the cause of those long and cruel wars which distressed that kingdom. Robert was wounded at the siege of Vannes in 1342, and died of his wound in England. John, son to Robert, and count of Eu, was taken prisoner at the battle of Poitiers in 1356, and terminated his career in 1387. His son Philip II. high constable of France, carried on war in Africa and Hungary, and died in 1397, being a prisoner of the Turks. He had a son named *Charles*, who died in 1472, leaving no issue.

Robert of Anjou, surnamed the Wise, third son of Charles the Lame, succeeded his father in the kingdom of Naples in 1309, by the protection of the popes, and the will of the people, to the exclusion of Charobert son of his eldest brother. He aided the Roman pontiffs against the emperor Henry VII. and, after the death of that prince, was nominated in 1313 vicar of the empire in Italy, in temporal matters, unless a new emperor was elected. This title was given him by Clement V. in virtue of a right which he pretended to have to govern the empire during an interregnum. Robert reigned with glory 33 years, eight months, and died on the 19th of January 1343, aged 64. "This prince (says M. De Montigni) had not those qualities which constitute heroes, but he had those which make good kings. He was religious, affable, generous, kind, wise, prudent, and a zealous promoter of justice." He was called the *Solomon* of his age. He loved the poor, and

Robert. and caused a ticket to be placed upon his palace, to give notice when he meant to distribute from the throne. He had no other passion but a very great love for learning. He used to say, that he would rather renounce his crown than his study. His court soon became the sanctuary of the sciences, which he encouraged equally by his example and his bounty. This prince was versed in theology, jurisprudence, philosophy, mathematics, and medicine. Bocace says, "that since the days of Solomon we have not seen so wise a prince upon the throne." For a great part of his life he had no taste for poetry; he even despised it, as, in his opinion, unworthy of a man of learning. A conversation which he had with Petrarch, however, undeceived him; he retained this poet at his court, and attempted himself to write some poems, which are still extant. He was forced to engage a little in war, for which he possessed no great talents: alluding to which, may be seen on his tomb a wolf and a lamb drinking out of the same vessel. Philip of Valois refrained from giving battle in 1339, by the repeated advice which this prince gave him, who was a great friend to France, both from inclination and interest. He detested quarrels among Christian princes, and had studied the science of astrology, not so much to know the course of the stars, as to learn by this chimerical science the hidden things of futurity. He believed that he read in the grand book of heaven a very great misfortune which would befal France if Philip hazarded a battle against the English.

Robert the First, called the Magnificent, duke of Normandy, second son of Richard II. succeeded in 1208 his brother Richard III. whom it is reported he poisoned. He had early in his reign to suppress frequent rebellions of several of the great vassals. He re-established in his estates Baudouin IV. count of Flanders, who had been unjustly stript of his possessions by his own son. He forced Canute king of Denmark, who was also king of England, to divide his possessions with his cousins Alfred and Edward. In the year 1235, he undertook barefooted a journey to the Holy Land; on his return from which he died, being poisoned at Nice in Bithynia, leaving as his successor William his natural son, afterwards king of England, whom he had caused before his departure to be publicly acknowledged in an Assembly of the states of Normandy.

Robert, or *Rupert*, surnamed the Short and the Mild, elector Palatine, son of Robert the Niggardly, was born in 1352, and elected Emperor of Germany in 1400, after the deposition of the cruel Wenceslas. In order to gain the affections of the Germans, he wished to restore Milanès to the empire, which Wenceslas had taken from it; but his attempts in this respect were unsuccessful. His attachment to the anti-pope Gregory XII. entirely alienated the affections of the German princes. To such a degree were they incensed against him, that they entered into a conspiracy to cut him off; but his death, which happened on the 18th of May 1410, being then 58 years old, put a stop to their machinations. Robert began to settle the sovereignty of the German Princes. The emperors had formerly retained in their own hands the power of life and death, within the territories of a great many of the nobles; but he yielded them this right by his letters patent.—The chief fault imputed to this prince was an excess of lenity. But, if we consider the plots which he had to detect, the conspiracies which he had to frustrate, the secret and powerful enemies he had to deal with; if we inquire also into the commotions which the wicked administration of Wenceslas had excited, the irruptions and devastations of plunderers and highway robbers, which the nobles countenanced, and the distressed situation in which he found Germany, we must without hesitation conclude, that his lenity indicated his prudence, in restoring by slow degrees the empire to its original tranquillity. Robert had his virtues, he loved his subjects, and governed them with wisdom. Possessed of much political knowledge for the age in which he lived, he wanted nothing but talents for war to make him an accomplished prince. He was twice married. The name and rank of his first wife is unknown; he had by her a son who died before him. His second wife was Elizabeth, daughter of Frederic burgrave of Nuremberg, by whom he had five sons and three daughters. The three daughters were, Margaret married to Charles duke of Lorrain; Agnes to Adolphus duke of Cleves; Elizabeth to Frederic duke of Austria. His sons were, Louis the first of the electoral branch, which became extinct in 1559; John father of Christopher king of Denmark; Frederic who died without issue; Otho count of Sintsheim; lastly, Stephen, from whom descended the elector, and the other counts palatine of the Rhine, who are extant at this day.

Robert (of Bavaria), prince palatine of the Rhine, and duke of Cumberland, the son of Frederic, elector palatine, by Elizabeth, daughter of James I. king of England, distinguished himself by his valour as a general and admiral; first in the Dutch, and then in the English service. He was unsuccessful in the cause of his uncle Charles I. against the parliament forces; but under Charles II. he defeated the Dutch fleet, and was made lord high admiral of England in 1673. This prince was a lover of the sciences, and particularly skilful in chemistry. He died in 1682.

ROBERTSON (Dr William), one of the most celebrated historians of his age, was one of those great characters whose private life, flowing in an even and unvaried stream, can afford no important information to the biographer, although his writings will be read to the latest posterity with undiminished pleasure. He was born at the manse of Borthwick in the year 1721. His father was, at the time of his death, one of the ministers of the Old Grey Friar's church in Edinburgh, which the Doctor came afterwards to supply. In 1743 he was licensed preacher, and placed in the parish of Glads-muir in 1744; whence, in 1758, he was translated to Lady Yester's parish in Edinburgh. In 1761, on the death of principal Goldie, he was elected principal of the University of Edinburgh, and appointed one of the ministers of the Old Grey Friar's church. About this period he received the degree of Doctor of Divinity, and was appointed historiographer to his majesty for Scotland, and one of his majesty's chaplains for that kingdom.

We find it not easy to ascertain at what period were first unfolded the great and singular talents which destined Dr Robertson to be one of the first writers that refined Britain from the reproach of not having any good historians. We are, however, assured, that before the publication of any of his literary performances,

even from his firſt appearance in public life, his abilities had begun to attract the notice of obſerving men; and to his more intimate friends he diſcovered marks of ſuch high-minded ambition, as, ſeconded by thoſe abilities, could not have failed to carry him to the firſt honours of his profeſſion, in whatever ſphere he had been placed, and whatever oppoſition he might have had to combat.

The firſt theatre that offered for the diſplay of his talents, was the General Aſſembly of the Church of Scotland. It is the annual meetings of this court that preſence to view men who would otherwiſe remain in the deepeſt obſcurity. There the humble paſtor, whoſe lot has been caſt in the remoteſt corner of the Highland wilds, feels himſelf, for a time, on a footing of equality with the firſt citizen in the kingdom: he can there diſpute with him the prize of eloquence, the moſt flattering diſtinction to a liberal mind; a diſtinction which is naturally ſought after with the greater eagerneſs in that aſſembly, as the ſimple eſtabliſhment of the church of Scotland has rendered it the only pre-eminence to which the greateſt part of its members can ever hope to attain.

From the moment Dr Robertſon firſt appeared in this aſſembly, he became the object of univerſal attention and applauſe. His ſpeeches were marked with the ſame manly and perſuaſive eloquence that diſtinguiſhes his hiſtorical compoſitions; and it was obſerved by all, that while his young rivals in oratory contented themſelves with opening a cauſe, or delivering a ſtudied harangue, he ſhowed equal ability to ſtart objections, to anſwer, or to reply; and that even his moſt unpremeditated effuſions were not unadorned with thoſe harmonious and ſeemingly meaſured periods, which have been ſo much admired in his works of labour and reflection. He ſoon came to be conſidered as the ableſt ſupporter of the cauſe he choſe to eſpouſe, and was now the unrivalled leader of one of the great parties which have long divided the church of which he was a member.

When we reflect upon this circumſtance, and conſider how much mankind are the ſame in every ſociety, we ſhall be the leſs ſurpriſed to find, in the literary works of Dr Robertſon, an acquaintance with the human heart, and a knowledge of the world, which we look for in vain in other hiſtorians. The man who has ſpent his life in the difficult taſk of conducting the deliberations of a popular aſſembly, in regulating the paſſions, the intereſts, the prejudices, of a numerous faction, has advantages over the pedant, or mere man of letters, which no ability, no ſtudy, no ſecond-hand information, can ever compenſate.

The firſt work which extended the Doctor's reputation beyond the walls of the general aſſembly, was a ſermon preached at Edinburgh before the ſociety for propagating Chriſtian knowledge, and afterwards publiſhed; the ſubject of which was, 'The ſtate of the world at the appearance of Jeſus Chriſt.' The ingenuity with which a number of detached circumſtances are there collected, and ſhown to tend to one ſingle point, may perhaps rival the art which is ſo much admired in the biſhop of Meaux's celebrated Univerſal Hiſtory.

This ſermon did great honour to the author; and it is probably to the reputation he gained by it, that we ought to attribute the unanimity with which he was called to be one of the miniſters of Edinburgh—an event which happened not long after, viz. in the year 1758. In 1759, he publiſhed, in two volumes quarto, 'The Hiſtory of Scotland, during the reigns of Queen Mary and of King James VI. till his Acceſſion to the Crown of England, with a Review of the Scotch Hiſtory previous to that period.' This work in its ſtructure is one of the moſt complete of all modern hiſtories. It is not a dry jejune narrative of events, deſtitute of ornament; nor is it a mere frothy relation, all glow and colouring. The hiſtorian diſcovers a ſufficient ſtore of imagination to engage the reader's attention, with a due proportion of judgment to check the exuberance of fancy. The arrangement of his work is admirable, and his deſcriptions are animated. His ſtyle is copious, nervous, and correct. He has diſplayed conſummate ſkill in rendering ſuch paſſages of our hiſtory as are familiar to our recollection agreeable and entertaining. He has embelliſhed old materials with all the elegance of modern dreſs. He has very judiciouſly avoided too circumſtantial a detail of trite facts. His narratives are ſuccinct and ſpirited; his reflections copious, frequent, and generally pertinent. His ſentiments reſpecting the guilt of Mary have indeed been warmly controverted by Meſſrs Tytler, Stuart, and Whitaker; and the general opinion now ſeems to be, that their victory is complete. That victory, however, on the part of Whitaker, is ſullied by the acrimony with which he writes. Dr Robertſon was no rancorous or malignant enemy of the unfortunate queen. While relating, what he doubtleſs believed, he makes every poſſible allowance for Mary from the circumſtances in which ſhe was placed; and his hiſtory will be read with pleaſure by candid men of all parties as long as the language in which it is compoſed ſhall continue to be underſtood. Robertſon.

In 1769, Dr Robertſon publiſhed, in three volumes quarto, The Hiſtory of the Reign of the Emperor Charles V. with a View of the Progreſs of Society in Europe, from the Subverſion of the Roman Empire to the beginning of the 16th century.—The vaſt and general importance of the period which this hiſtory compriſes, together with the reputation which our hiſtorian had deſervedly acquired, co-operated to raiſe ſuch high expectations in the public, that no work perhaps was ever more impatiently wiſhed for, or peruſed with greater avidity. The firſt volume (which is a preliminary one, containing the progreſs of ſociety in Europe, as mentioned in the title) is a very valuable part of the work; for it ſerves not only as a key to the pages that follow, but may be conſidered as a general introduction to the ſtudy of hiſtory in that period in which the ſeveral powers of Europe were formed into one great political ſyſtem, in which each took a ſtation, wherein it has ſince remained (till within a very few years at leaſt) with leſs alterations than could have been expected, after the ſhocks occaſioned by ſo many internal revolutions, and ſo many foreign wars. Of the hiſtory itſelf, it may be ſufficient to obſerve, that it is juſtly ranked among the capital pieces of hiſtorical excellence. There is an elegance of expreſſion, a depth of diſcernment, and a correctneſs of judgment, which do honour to the hiſtorian. The characters are inimitably penned. They are not contraſted by a ſtudied antitheſis, but by an oppoſition which reſults from a very

Robertſon. very acute and penetrating inſight into the real merits of each character, fairly deduced from the ſeveral circumſtances of his conduct exemplified in the hiſtory. For this work the doctor got L.4500 Sterling.

In 1779, Dr Robertſon publiſhed The Hiſtory of America, in two volumes quarto. This celebrated work may be conſidered with great propriety as a ſequel to the preceding hiſtory. From the cloſe of the 15th century we date the moſt ſplendid era in the annals of modern times. Diſcoveries were then made, the influence of which deſcended to poſterity; and events happened that gave a new direction to the ſpirit of nations.

To the inhabitants of Europe, America was in every reſpect a new world. There the face of the earth changed its appearance. The plants and trees and animals were ſtrange; and nature ſeemed no longer the ſame. A continent opened that appeared to have recently come from the hands of the Creator, and which ſhowed lakes, rivers, and mountains, on a grander ſcale, and the vegetable kingdom in greater magnificence, than in the other quarters of the globe; but the animal tribes in a ſtate of degradation, few in number, degenerated in kind, imperfect, and unfiniſhed. The human ſpecies in the earlieſt ſtage of its progreſs, vaſt and numerous nations in the rudeſt form of the ſavage ſtate which philoſophers have contemplated, and two great empires in the loweſt degree of civilization which any records have tranſmitted to our review, preſented to the philoſophic eye at this period the moſt fruitful ſubject of ſpeculation that was to be found in the annals of hiſtory.

The diſcovery of the New World, moreover, was not only a curious ſpectacle to the philoſopher, but, by the change which it effected, an intereſting ſpectacle to the human race. When Columbus ſet ſail for unknown lands, he little expected that he was to make a revolution in the ſyſtem of human affairs, and to form the deſtiny of Europe for ages to come. The importance and celebrity therefore of the ſubject had attracted the attention of philoſophers and hiſtorians. Views and ſketches of the new world had been given by able writers, and ſplendid portions of the American ſtory had been adorned with all the beauties of eloquence. But, prior to the appearance of Dr Robertſon's hiſtory, no author had beſtowed the mature and profound inveſtigation which ſuch a ſubject required, or had finiſhed, upon a regular plan, that complete narration and perfect whole which it is the province of the hiſtorian to tranſmit to poſterity. And as the ſubject upon which our author entered was grand, his execution was maſterly. The character of his former works was immediately diſcerned in it. They had been read with uncommon admiration. When the Hiſtory of Scotland was firſt publiſhed, and the author altogether unknown, Lord Cheſterfield pronounced it to be equal in eloquence and beauty to the productions of Livy, the pureſt and moſt claſſical of all the Roman Hiſtorians. His literary reputation was not confined to his own country: the teſtimony of Europe was ſoon added to the voice of Britain. It may be mentioned, indeed, as the characteriſtic quality of our author's manner, that he poſſeſſed in no common degree that ſupported elevation which is ſuitable to compoſitions of the higher claſs; and, in his Hiſtory of America, he diſplayed that happy union of ſtrength and grace which becomes the majeſty of the hiſtoric muſe. In the fourth book of his firſt volume, which contains a deſcription of America when firſt diſcovered, and a philoſophical inquiry into the manners and policy of its ancient inhabitants, he diſplays, moreover, ſo much patient inveſtigation and ſound philoſophy, abounds in ſuch beautiful or intereſting deſcription, and exhibits ſuch variety and copiouſneſs of elegant writing, that future times will probably refer to it as that part of his works which gives the beſt idea of his genius, and is the moſt finiſhed of all his productions. Robertſon.

In 1787 appeared a tranſlation of the Abbé Clavigero's Hiſtory of Mexico; in which work the author threw out various reflections, tending in ſeveral inſtances to impeach the credit of Dr Robertſon's Hiſtory of America. This attack induced our learned hiſtorian to reviſe his work, and to inquire into the truth of the charges brought againſt it by the hiſtorian of New Spain: and this he appears to have done with a becoming attention to the importance of the facts that are controverted, and to the common intereſts of truth. The reſult he publiſhed in 1788, under the title of Additions and Corrections to the former Editions of Dr Robertſon's Hiſtory of America.—In many of the diſputed paſſages, he fully anſwered the Abbé Clavigero, and vindicated himſelf: in others he candidly ſubmitted to correction, and thus gave additional value to his own work.

The literary labours of Dr Robertſon appear to have been terminated in 1791 by the publication of An Hiſtorical Diſquiſition concerning the Knowledge which the Ancients had of India, and the progreſs of Trade with that Country prior to the Diſcovery of the Paſſage to it by the Cape of Good Hope; with an Appendix, containing Obſervations on the Civil Polity, the Laws, and Judicial Proceedings, the Arts, the Sciences, and Religious Inſtitutions of the Indians.—The peruſal of Major Rennell's Memoir, for illuſtrating his Map of Hindoſtan, ſuggeſted to Dr Robertſon the deſign of examining more fully than he had done, in his Hiſtory of America, into the knowledge which the ancients had of India, and of conſidering what is certain, what is obſcure, and what is fabulous, in their accounts of that remote country. Of his various performances, this is not that of which the deſign is the moſt extenſive, or the execution the moſt elaborate; but in this hiſtorical diſquiſition we perceive the ſame patient aſſiduity in collecting his materials, the ſame diſcernment in arranging them, the ſame perſpicuity of narrative, and the ſame power of illuſtration, which ſo eminently diſtinguiſh his other writings, and which have long rendered them the delight of the Britiſh reader at home and an honour to Britiſh literature abroad.

A truly uſeful life Dr Robertſon cloſed on the 11th of June 1793, at Grange-Houſe, near Edinburgh, after a lingering illneſs, which he endured with exemplary fortitude and reſignation. It may be truly obſerved of him, that no man lived more reſpected, or died more ſincerely lamented. Indefatigable in his literary reſearches, and poſſeſſing from nature a ſound and vigorous underſtanding, he acquired a ſtore of uſeful knowledge, which afforded him ample ſcope for the exertion of his extraordinary abilities, and raiſed him to the moſt diſtinguiſhed eminence in the republic of letters. As a

miniſter.

Robertſon Robinia.

a miniſter of the goſpel, he was a faithful paſtor, and juſtly merited the eſteem and veneration of his flock. In a word, he may be pronounced to be one of the moſt perfect characters of the age; and his name will be a laſting honour to the iſland that gave him birth. His converſation was cheerful, entertaining, and inſtructive; his manners affable, pleaſing, and endearing.

Dr Robertſon left three ſons and two daughters. The eldeſt ſon is procurator for the church of Scotland, and an advocate. The other two are officers in the army; and one of them diſtinguiſhed himſelf under Lord Cornwallis in ſuch a manner as to command the warmeſt praiſe from that illuſtrious general.

ROBIGUS and ROBIGO, a Roman god and goddeſs, who joined in the preſervation of corn from blaſts. Their feſtival was kept on the 25th of April.

ROBIN HOOD. See HOOD.

Robin Red-breaſt. See MOTACILLA.

ROBINIA, FALSE ACACIA, in botany: A genus of the decandria order, belonging to the diadelphia claſs of plants; and in the natural method ranking under the 32d order, *Papilionaceæ*. The calyx is quadrifid; the legumen gibbous and elongated. There are nine ſpecies. The moſt remarkable are the caragnana and ferox, the leaves of the former of which are conjugated, and compoſed of a number of ſmall folioles, of an oval figure, and ranged by pairs on one common ſtock. The flowers are leguminous, and are cluſtered on a filament. Every flower conſiſts of a ſmall bell-ſhaped petal, cut into four ſegments at the edge, the upper part being rather the wideſt. The keel is ſmall, open, and rounded. The wings are large, oval, and a little raiſed. Within are ten ſtamina united at the baſe, curved towards the top, and rounded at the ſummit. In the midſt of a ſheath, formed by the filaments of the ſtamina, the piſtil is perceivable, conſiſting of an oval germen, terminated by a kind of button. This germen becomes afterwards an oblong flattiſh curved pod, containing four or five ſeeds, of a ſize and ſhape irregular and unequal; yet in both reſpects ſomewhat reſembling a lentil.

This tree grows naturally in the ſevere climates of Northern Aſia, in a ſandy ſoil mixed with black light earth. It is particularly found on the banks of great rivers, as the Oby, Jeniſia, &c. It is very rarely met with in the inhabited parts of the country, becauſe cattle are very fond of its leaves, and hogs of its roots; and it is ſo hardy, that the ſevereſt winters do not affect it. Gmelin found it in the neighbourhood of Tobolſk, buried under 15 feet of ſnow and ice, yet had it not ſuffered the leaſt damage. Its culture conſiſts in being planted or ſowed in a lightiſh ſandy ſoil, which [illegible] have been lately manured. It thrives beſt near a river, or on the edge of a brook or ſpring; but preſently dies if planted in a marſhy ſpot, where the water ſtagnates. If it is planted on a rich mold, well tilled, it will grow to the height of 20 feet, and in a very few years will be as big as a common birch tree.

In a very bad ſoil this tree degenerates, and becomes a mere [illegible] leaves grow hard, and their fine bright green colour is changed to a dull deep green. The Tonguſian Tartars, and the inhabitants of the northern parts of Siberia, are very fond of the fruit of this tree, it being almoſt the only ſort of pulſe they eat. M. Strahlenberg, author of a well eſteemed deſcription of Siberia, aſſures us that this fruit is tolerably pleaſant food, and very nouriſhing. Theſe peaſe are firſt infuſed in boiling water, to take off a certain acrid taſte they have, and are afterwards dreſſed like common peaſe or Windſor beans; and being ground into meal, pretty good cakes are made of them. The leaves and tender ſhoots of this tree make excellent fodder for ſeveral ſorts of cattle. The roots, being ſweet and ſucculent, are very well adapted to fattening hogs; and the fruit is greedily eaten by all ſorts of poultry. After ſeveral experiments I found that ſimilar to the methods uſed with anil and indigo, a fine blue colour was procured from its leaves. The ſmaller kind of this tree ſeems ſtill better adapted to anſwer this purpoſe. The ſtriking elegance of its foliage, joined to the pleaſing yellow colour of its beautiful flowers, ſhould, one would imagine, bring it into requeſt for forming noſegays, or for ſpeedily making an elegant hedge. Robina, Robins.

Beſides the qualities above recited, it poſſeſſes the uncommon advantage of growing exceedingly quick, and of being eaſily tranſplanted. There are large plantations of it now in Sweden, Norway, Lapland, and Iceland. Linnæus aſſures us, that, after the *Pinis ſolquinis*, erroneouſly called the *cedar tree of Siberia*, this tree, of all that are to be found in Siberia, is moſt worthy of cultivation.

2. The robinia ferox is a beautiful hardy ſhrub, and, on account of its robuſt ſtrong prickles, might be introduced into this country as a hedge plant, with much propriety. It reſiſts the ſevereſt cold of the climate of St Peterſburgh, and perfects its ſeed in the garden of the empreſs there. It riſes to the height of ſix or eight feet; does not ſend out ſuckers from the root, nor ramble ſo much as to be with difficulty kept within bounds. Its flowers are yellow, and the general colour of the plant a light pleaſing green. A figure of it is given in the *Flora Roſſica* by Dr Pallas, who found it in the ſouthern diſtricts, and ſent the ſeeds to St Peterſbourgh, where it has proſpered in a ſituation where few plants can be made to live.

ROBINS (Benjamin), a moſt ingenious mathematician, was born at Bath in 1707. His parents were Quakers, and of low condition, conſequently neither able nor willing to have him much inſtructed in human learning. Nevertheleſs his own propenſity to ſcience procured him a recommendation to Dr Pemberton at London; by whoſe aſſiſtance, while he attained the ſublimer parts of mathematical knowledge, he commenced teacher of the mathematics. But the buſineſs of teaching, which required confinement, not ſuiting his active diſpoſition, he gradually declined it, and engaged in buſineſs that required more exerciſe. Hence he tried many laborious experiments in gunnery, from the perſuaſion that the reſiſtance of the air has a much greater influence on ſwift projectiles than is generally imagined. Hence alſo he was led to conſider the mechanic arts that depend on mathematical principles; as the conſtruction of mills, the building of bridges, the draining of fens, the rendering of rivers navigable, and the making of harbours. Among other arts, fortification much engaged his attention; and he met with opportunities of perfecting himſelf by viewing the principal ſtrong places of Flanders, in ſome tours he made abroad with perſons of diſtinction.

Upon his return from one of theſe excurſions, he

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Robins. found the learned amuſed with Dr Berkeley's work, intitled *The Analyſt*, in which an attempt was made to explode the method of fluxions. Mr Robins was therefore adviſed to clear up this affair by giving a diſtinct account of Sir Iſaac Newton's doctrines, in ſuch a manner as to obviate all the objections that had been made without naming them. Accordingly he publiſhed, in 1735, A Diſcourſe concerning the Nature and Certainty of Sir Iſaac Newton's Method of Fluxions: and ſome exceptions being made to his manner of defending Sir Iſaac Newton, he afterwards wrote two or three additional diſcourſes. In 1738 he defended the fame great philoſopher againſt an objection contained in a note at the end of a Latin piece, called *Matko, ſive Coſmotheoria puerilis*; and the following year printed Remarks on M. Euler's Treatiſe of Motion, on Dr Smith's Syſtem of Optics, and on Dr Jurin's Diſcourſe of diſtinct and indiſtinct Viſion annexed to Dr Smith's work. In the meanwhile, Mr Robins did not ſolely confine himſelf to mathematical ſubjects: for in 1739 he publiſhed three pamphlets on political affairs, without his name; when two of them, relating to the convention and negociations with Spain, were ſo univerſally eſteemed, as to occaſion his being employed in a very honourable poſt; for on a committee being appointed to examine into the paſt conduct of Sir Robert Walpole, he was choſen their ſecretary.

In 1742, Mr Robins publiſhed a ſmall treatiſe, intitled *New Principles of Gunnery*, containing the reſult of many experiments; when a Diſcourſe being publiſhed in the Philoſophical Tranſactions, in order to invalidate ſome of his opinions, he thought proper, in an account he gave of his book in the ſame Tranſactions, to take notice of thoſe experiments; in conſequence of which, ſeveral of his Diſſertations on the Reſiſtance of the Air were read, and the experiments exhibited before the Royal Society, for which he was preſented by that honourable body with a gold medal.

In 1748 appeared Lord Anſon's Voyage round the World, which, though Mr Walter's name is in the title, has been generally thought to be the work of Mr Robins. Mr Walter, chaplain on board the Centurion, had brought it down to his departure from Macao for England, when he propoſed to print the work by ſubſcription. It was, however, it is ſaid, thought proper, that an able judge ſhould review and correct it, and Mr Robins was appointed; when, upon examination, it was reſolved that the whole ſhould be written by Mr Robins, and that what Mr Walter had done ſhould only ſerve as materials. Hence the introduction entire, and many diſſertations in the body of the work, it is ſaid, were compoſed by him, without receiving the leaſt aſſiſtance from Mr Walter's manuſcript, which chiefly related to the wind and the weather, the currents, courſes, bearings, diſtances, the qualities of the ground on which they anchored, and ſuch particulars as generally fill up a ſailor's account. No production of this kind ever met with a more favourable reception; four large impreſſions were ſold within a twelvemonth; and it has been tranſlated into moſt of the languages of Europe. The fifth edition, printed at London in 1749, was reviſed and corrected by Mr Robins himſelf. It appears, however, from the corrigenda and addenda to the 1ſt volume of the Biographia Britannica, printed in the beginning of the fourth volume of that work, that Mr Robins was only conſulted with reſpect to the diſpoſition of the drawings, and that he had left England before the book was printed. Whether this be the fact, as it is aſſerted to be by the widow of Mr Walter, it is not for us to determine. Robins, Robinſon.

It is certain, however, that Mr Robins acquired the fame, and he was ſoon after deſired to compoſe an apology for the unfortunate affair at Preſtonpans in Scotland, which was prefixed as a preface to The Report of the Proceedings of the Board of General Officers on their Examination into the Conduct of Lieutenant-General Sir John Cope; and this preface was eſteemed a maſterpiece in its kind. He afterwards, through the intereſt of Lord Anſon, contributed to the improvements made in the Royal Obſervatory at Greenwich. Having thus eſtabliſhed his reputation, he was offered the choice of two conſiderable employments; either to go to Paris as one of the commiſſaries for adjuſting the limits of Arcadia, or to be engineer-general to the Eaſt India company. He choſe the latter, and arrived in the Eaſt Indies in 1750; but the climate not agreeing with his conſtitution, he died there the year following.

ROBINSON (the moſt Rev. Sir Richard) archbiſhop of Armagh and Lord Rokeby, was immediately deſcended from the Robinſons of Robeky in the North Riding of the county of York, and was born in 1709. He was educated at Weſtminſter ſchool, from whence he was elected to Chriſt-Church, Oxford, in 1726. After continuing his ſtudies there the uſual time, Doctor Blackburne, archbiſhop of York, appointed him his chaplain, and collated him firſt to the rectory of Elton, in the Eaſt Riding of Yorkſhire, and next to the prebend of Grindal, in the cathedral of York. In 1751 he attended the Duke of Dorſet, lord-lieutenant of Ireland, to that kingdom, as his firſt chaplain, and the ſame year was promoted to the biſhopric of Killala. A family connection with the Earl of Holderneſſe, who was ſecretary of ſtate that year, with the Earl of Sandwich and other noblemen related to him, opened the faireſt proſpects of attaining to the firſt dignity in the Iriſh church. Accordingly in 1759 he was tranſlated to the united ſees of Leighlin and Ferns, and in 1761 to Kildare. The Duke of Northumberland being appointed to the lieutenancy of Ireland in 1765, he was advanced to the primacy of Armagh, made lord-almoner, and vice-chancellor of the univerſity of Dublin. When Lord Harcourt was lord-lieutenant of Ireland in 1777, the king was pleaſed by privy-ſeal at St James's, February 6th, and by patent at Dublin the 26th of the ſame month, to create him Baron Rokeby of Armagh, with remainder to Matthew Robinſon of Weſt Layton, Eſq; and in 1783 he was appointed prelate to the moſt illuſtrious order of St Patrick. On the death of the Duke of Rutland lord-lieutenant of Ireland in 1787, he was nominated one of the lords-juſtices of that kingdom. Sir William Robinſon, his brother, dying in 1785, the primate ſucceeded to the title of baronet, and is the ſurvivor in the direct male line of the Robinſons of Rokeby, being the 8th in deſcent from William of Kendal. His grace died at Clifton near Briſtol in the end of October 1794.

No primate ever ſat in the ſee of Armagh who watched more carefully over the intereſt of the church of Ireland, as the ſtatute-book evinces. The act of the

11th.

Robinſon. 11th and 12th of his preſent majeſty, which ſecures to biſhops and eccleſiaſtical perſons repayment by their ſucceſſors of expenditures in purchaſing glebes and houſes, or building new houſes, originated from this excellent man, and muſt ever endear his name to the clergy. The other acts for repairing churches, and facilitating the recovery of eccleſiaſtical dues, were among the many happy exertions of the primate.

But it was at Armagh, the ancient ſeat of the primacy, that he diſplayed a princely munificence. A very elegant palace, 90 feet by 60, and 40 high, adorns that town; it is light and pleaſing, without the addition of wings or leſſer parts; which too frequently wanting a ſufficient uniformity with the body of the edifice, are unconnected with it in effect, and divide the attention. Large and ample offices are conveniently placed behind a plantation at a ſmall diſtance. Around the palace is a large lawn, which ſpreads on every ſide over the hills, ſkirted by young plantations, in one of which is a terrace, which commands a moſt beautiful view of cultivated hill and dale; this view from the palace is much improved by the barracks, the ſchool, and a new church at a diſtance; all which are ſo placed as to be exceedingly ornamental to the whole country.

The barracks were erected under the primate's direction, and form a large and handſome edifice. The ſchool is a building of conſiderable extent, and admirably adapted for the purpoſe; a more beautiful or better contrived one is nowhere to be ſeen; there are apartments for a maſter, a ſchool-room 56 feet by 28, a large dining room and ſpacious airy dormitories, with every other neceſſary, and a ſpacious play-ground walled in; the whole forming a handſome front: and attention being paid to the reſidence of the maſter (the ſalary is 400l. a year), the ſchool flouriſhes, and muſt prove one of the greateſt advantages to the country. This edifice was built entirely at the primate's expence. The church is erected of white ſtone, and having a tall ſpire, makes a very agreeable object, in a country where churches and ſpires do not abound. The primate built three other churches, and made conſiderable reparations to the cathedral; he was alſo the means of erecting a public infirmary, contributing amply to it himſelf: he likewiſe conſtructed a public library at his own coſt, endowed it, and gave it a large collection of books; the room is 45 feet by 25, and 20 high, with a gallery and apartments for the librarian. The town he ornamented with a market-houſe and ſhambles, and was the direct means, by giving leaſes upon that condition, of almoſt new-building the whole place. He found it a neſt of mud cabins, and he left it a well-built city of ſtone and ſlate. Theſe are noble and ſpirited works, in which the primate expended not leſs than L. 30,000. Had this ſum been laid out in improving a paternal eſtate, even then they would be deſerving great praiſe; but it is not for his poſterity but the public good that his grace was ſo munificent. A medal was ſtruck by the ingenious William Moſſop of Dublin, which has on one ſide the head of the primate, inſcribed "Richard Robinſon, Baron Rokeby, Lord Primate of all Ireland." And on the reverſe, the ſouth front of the obſervatory in Armagh, erected by his grace, with this admirable motto, "The Heavens declare the glory of God." MDCCLXXXIX.

Robinson (Robert), a diſſenting miniſter of conſiderable note, was born on the 8th of October 1735 at Swaffham in Norfolk. His father died when he was young; and his maternal grandfather Robert Wilkin, of Milden-hall, Suffolk, gent. who had ever been diſſatisfied with his daughter's marriage, deprived him of his maternal inheritance, cutting him off with half a guinea. His uncle, however, who was a ſubſtantial farmer, in ſome meaſure ſupplied this loſs. He took Mr Robinſon home, and placed him under the Rev. Joſeph Brett, at Scarning ſchool in Norfolk, with a view to the miniſtry of the church of England; where he had for one of his ſchool-fellows the lord chancellor Thurlow. When about the age of 15 or 16, he imbibed the notions of George Whitfield; on which account he was diſcarded by his uncle, and again expoſed to poverty and want. He firſt directed his thoughts towards the miniſtry in the year 1754, and commenced preacher in the following year at the age of 20; preaching his firſt ſermon to a congregation of poor people at Milden-hall. He continued for a year or two as one of Mr Whitfield's preachers, and during that period he married. In the year 1758, however, he determined to ſeparate from the Methodiſts: after which he ſettled at Norwich with a ſmall congregation formed chiefly of his methodiſtic friends, being at that time an Independent. In the year 1759 he was invited to Cambridge, and for two years preached on trial to a congregation conſiſting of no more than 34 people, and ſo poor that they could only raiſe L. 3 : 6 : 0 a quarter for his ſubſiſtence. In June 1761 he ſettled as their paſtor, and was ordained in the uſual manner; at which time we are told he exerciſed the office of a barber. In 1774, his congregation had ſo much increaſed as to conſiſt of 1000 ſouls, including children and ſervants. Robinſon.

In Cambridge Mr Robertſon's talents ſoon attracted notice, and he quickly ſet up a Sunday evening lecture, which was well attended. His preaching was altogether without notes; a method in which he was peculiarly happy: not by truſting to his memory entirely, nor by working himſelf up to a degree of warmth and paſſion, to which the preachers among whom he firſt appeared commonly owe their ready utterance; but by thoroughly ſtudying and making himſelf perfectly maſter of his ſubject, and a certain facility of expreſſion which is never at a loſs for ſuitable and proper words. In ſhort, his manner was admirably adapted to enlighten the underſtanding, and to affect and reform the heart. He had ſuch a plainneſs of ſpeech, ſuch an eaſy and apparent method in dividing a diſcourſe, and ſuch a familiar way of reaſoning, as diſcovered an heart filled with the tendereſt concern for the meaneſt of his hearers; and yet there was a decency, propriety, and juſtneſs, that the moſt judicious could not but approve. Several gentlemen of the univerſity, eminent for character and abilities, we are told, were his conſtant hearers.

The circumſtances which loſt him his uncle's patronage paved the way for the future events of his life. The incident which made him diſcard the common ſentiments on the ſubject of baptiſm, at once marked the turn of his mind, and ſhows what apparently ſlight cauſes frequently determine the lot and uſefulneſs of our lives. He was invited to the baptiſm of a child; the miniſter who was to perform the ſervice keeping the company in long expectation of his appearance, ſome

Robinſon, one ſuggeſted, that ſuppoſing the child were not baptized at all, he ſaw not how it could affect his happineſs. Though the converſation was not purſued, the hint ſtruck Mr Robinſon's mind; and he immediately determined to read the New Teſtament with this particular view, to examine what it ſaid concerning the baptiſm of infants. He accordingly began with the Goſpel of Matthew; and, in ſucceſſion, peruſed the hiſtorical and epiſtolary books; in expectation that he ſhould find in every following part what he had not met with in the preceding parts of the ſacred volume; namely, paſſages recommending and urging this rite. But obſerving, on the whole, a total ſilence about it, he thought it his duty to relinquiſh the practice, as without foundation in the rule of our faith; which appeared to him to ſpeak only of the baptiſm of believers.

This change of his ſentiments was more unfavourable than the former alterations in his religious judgment to his worldly views; and having married very early in life from pure affection, he was involved in great difficulties for near 12 years after his ſettlement in Cambridge; as, in that courſe of time, his family became numerous, and the ſupport of an aged mother, as well as of a wife and ten children, depended upon him. But unexpected ſupplies, from quarters of which he was ignorant, frequently relieved his neceſſities, and confirmed his truſt in Providence: yet the ſituation of his family muſt, it is eaſy to conceive, have much affected his mind. For he appears to have poſſeſſed great tenderneſs and ſenſibility, and to have regarded with peculiar endearment his domeſtic connections.

It may be reckoned a circumſtance worthy of mention, that the ſphere of Mr Robinſon's miniſtry was the ſame in which his great-grandfather Mr Shelly, of Jeſus College, and vicar of All-Saints, had, with others, diffuſed the principles of the Puritans, about the beginning of the laſt century. The reputation of the Diſſenters in the univerſity and neighbourhood had for almoſt a century been ſinking into contempt, when Mr Robinſon ſettled with the baptiſt church at Stone-Yard. His abilities and aſſiduity, however, raiſed their reputation. The place in which his people aſſembled, which was at firſt a barn, afterwards a ſtable and granary, and then a meeting-houſe, but ſtill a damp, dark, and ruinous place, ſoon became too ſmall for the audience; and ſeveral of the new auditors being men of fortune, they purchaſed the ſite, and erected at their own expence a new houſe in the year 1764.

His labours as a preacher were not limited to the town of Cambridge; but ſoon after his coming there, he ſet up ſeveral lectures in the adjacent villages. His lectures were either annual or occaſional, or ſtated on fixed days. The uſual time was half an hour after ſix in the evening; and ſometimes at five in the morning; and now and then in the ſummer at two in the afternoon, for the ſake of thoſe who came from a diſtance.

He died on the 9th of June 1790, at the houſe of William Ruſſel, Eſq; of Showell green near Birmingham. He had laboured under an alarming diſorder for ſome time before; but on the Sunday preceding his death he preached a charity ſermon. On Monday he was ſeized with a fit; on Tueſday he recovered and went to bed tolerably well, and was found dead next morning.

The abilities of Mr Robinſon were very conſiderable, as appears from his numerous works; and he poſſeſſed the quality of expreſſing his thoughts in an eaſy and a forcible manner. He is ſaid to have been of an unſteady temper, but the frequency with which he changed his religious creed is a proof rather of candour than unſteadineſs. The acrimony with which he treated the Church of England, and his plan of Lectures of the Principles of Nonconformity, for the Inſtruction of Catechumens, have expoſed him to much cenſure.

Roborants, Rochefort.

Mr Robinſon's largeſt work, the Hiſtory of Baptiſm and of the Baptiſts, was publiſhed ſince his death, and is written in the ſame ſtyle and with the ſame ability as his other works. Though we have heard it remarked by a learned profeſſor of Theology in the church which he oppoſed, it is not a little remarkable that there is in it no argument or fact againſt infant baptiſm which was not anſwered by Dr Wall nearly 100 years ago, of whoſe arguments Mr Robinſon however takes no notice.

ROBORANTS, in pharmacy, medicines which ſtrengthen the parts, and give new vigour to the conſtitution.

ROCHEFORT, a handſome and conſiderable town of France in the territory of Aunis. It was conſtructed by Louis XIV. and is built in the midſt of marſhes expreſsly drained for that purpoſe; and time evinced the utility of the project, for as a port it ſoon became as neceſſary and important to the crown of France as Breſt or Toulon. It has a department of the marine, and has large magazines of naval ſtores. There is alſo one of the fineſt halls of arms in the kingdom, and a great many workmen employed in making them; there are alſo forges for anchors, and work-houſes for ſhip-carpenters, who are employed in every thing that relates to the fitting out of ſhips that come within the compaſs of their province. They likewiſe caſt great guns here; and have artiſts, whoſe employment is ſculpture and painting. There are alſo ſtocks for building men of war, rope-walks, magazines of proviſions and powder, a manufactory of ſail-cloth, an hoſpital for ſailors, and proper places to clean the ſhips. Add to theſe, the houſes of the intendant, the ſquare of the capuchins, and the ſuperb ſtructure which contains lodgings for 300 marine guards, where they are taught the buſineſs and exerciſes belonging to ſeamen and officers who go on board the men of war.

Beſide the uſual number of workmen which were employed at Rochefort during the monarchy, which amounted to about 900, there were about 600 galley ſlaves, occupied in the moſt painful and laborious branches of ſervice. The town is ſituated on the river Charente, about five leagues from its mouth, and was fortified by Louis XIV. at the time he conſtructed it; but its ſituation is at ſo conſiderable a diſtance from the ſea, as to render it ſufficiently ſecure from any attack, and they have therefore cloſed up the battlements, and neglected the fortifications. The town is laid out with great beauty and elegance. The ſtreets are all very broad and ſtraight, extending through the whole place from ſide to ſide; but the buildings do not correſpond with them in this reſpect, as they are moſtly low and irregular. W. Long. 0. 54. N. Lat. 46. 3.

ROCHEFOUCAULT (Francis earl of), deſcended of an illuſtrious family, next in dignity to that of

Rochefoucault the two reigns, was chamberlain to king Charles VIII. and Louis XII. His character at court was admired as being generous, upright, and sincere. In 1494 he stood godfather to Francis I. who, when he came to the throne, continued to pay great respect to that spiritual relation. He made him his chamberlain in ordinary, and erected, in 1515, the barony of Rochefoucault into an earldom; and, in his writ of erection, observes, that he did this in memory of the great, honourable, highly useful, and commendable services which the said Francis had done to his predecessors, to the crown of France, and to himself. The earl of Rochefoucault died in 1517, leaving behind him an illustrious memory, and a character universally respected. Since his time all the eldest sons of that family have taken the name of Francis.

Rochefoucault (Francis duke de la), prince of Marillac, governor of Poitou, was born in 1603. —He was the son of Francis, the first duke of Rochefoucault, and was distinguished equally by his courage and his wit. These shining qualities endeared him to all the nobility at court, who were ambitious of decorating themselves at once with the laurels of Mars and of Apollo. He wrote two excellent works; the one a book of Maxims, which M. de Voltaire says has contributed more than any thing else to form the taste of the French nation; and the other, Memoirs of the Regency of Queen Anne of Austria. It was partly at the instigation of the beautiful duchess de Longueville, to whom he had been long attached, that the duke de Rochefoucault engaged in the civil wars, in which he signalized himself particularly at the battle of St Antoine. Beholding one day a portrait of this lady, he wrote underneath it these two lines from the tragedy of Alcyonée:

"Pour meriter son cœur, pour plaire à ses beaux yeux,
"J'ai fait la guerre aux rois, je l'aurois fait aux dieux."

Which may be thus rendered in English:

"To gain her heart, and please her sparkling eyes,
"I've war'd with kings, and would have brav'd the skies."

It is reported, that after his rupture with Madame Longueville, he parodied the above verses thus:

"Pour ce cœur inconstant, qu'enfin je connois mieux,
"Je fais la guerre aux rois, j'en ai perdu les yeux."

After the civil wars were ended, he thought of nothing but enjoying the calm pleasures of friendship and literature. His house became the rendezvous of every person of genius in Paris and Versailles. Racine, Boileau, Savigne, and La Fayette, found in his conversation charms which they sought for in vain elsewhere. He was not however, with all his elegance and genius, a member of the French Academy. The necessity of making a public speech the day of his reception was the only cause that he did not claim admittance. This nobleman, with all the courage he had displayed upon various critical occasions, and with his superiority of birth and understanding over the common run of men, did not think himself capable of facing an audience, to utter only four lines in public, without being out of countenance. He died at Paris in 1680, aged 68, leaving behind him a character which has been variously drawn by those who during his life were proud of his friendship. That he was well acquainted with human nature is certain; and his merit in that respect was fully admitted by Swift, who was himself not easily imposed upon by the artificial disguises of the hypocrite. Rochelle.

ROCHELLE, a celebrated city of France, capital of the territory of Aunis, with a very commodious and safe harbour, which, though it does not admit vessels of any considerable burden, is yet well calculated for trade. "It may be divided (says Mr Wraxal) into three parts; the bason, which is the innermost of these, is only a quarter of a mile in circumference; and at the entrance are two very noble Gothic towers, called the Tower de St Nicholas, and the Tour de la Chaine. They are now in a state of decay, but were anciently designed to protect the town and harbour. Without these towers is the Avant Port, extending more than a league, and bounded by two points of land to the north and south. Beyond all is the road where the largest ships usually anchor, protected from the south-west winds by the islands of Re, Oleron, and Aix." The celebrated mound erected by Richlieu extends from side to side across the whole harbour, nearly an English mile in length, and when the sea retires is still visible. "I walked out upon it (says Mr Wraxal) above 300 feet. Its breadth is at this time more than 150 feet, and it widens continually towards the base. No effort of art or power can possibly impress the mind with so vast and sublime an idea of the genius of Richlieu, as does this bulwark against the sea. While I stood upon it, in the middle of the port, between the waves which rolled on either side, and contemplated its extent and strength, I was almost inclined to suppose this astonishing work to be superior to human power, and the production rather of a deity than of a mortal. A small opening of about 200 feet was left by Pompey Targon, the architect who constructed it, to give entrance to vessels, and shut up by chains fixed across it. A tower was likewise erected at each end, no remains of which are now to be seen. Neither the duke of Buckingham, nor the earl of Lindsey, who were successively sent from England to the aid of the besieged by Charles the First, dared to attack this formidable barrier: they retired, and left Rochelle to its fate. In all probability, a thousand years, aided by storms and all the fury of the sea, will make little or no impression on this mound, which is designed to endure as long as the fame of the Cardinal, its author."

Before the revolution, Rochelle was a bishop's see, and contained a college of humanities, an academy, a school for medicine, anatomy, and botany, and a mint. It cannot lay claim to any remote antiquity, being merely a little collection of houses on the shore, inhabited by fishermen, when William IX. last count of Poictou, rendered himself master of it in 1139. From this Prince it descended to his only daughter Eleanor, afterwards queen of Henry II. of England; and her charter incorporating the town is still preserved in the registers of the city. In the year 1540, Rochelle was the grand asylum of the Protestants; and the massacre at Paris was soon followed by the siege of Rochelle, which began in November 1572, and was raised in June 1573; but in 1628, after a most obstinate resistance, and a siege of 13 months, it surrendered to the

Rocheſter. the mercy of Louis XIII. At the beginning of the firſt ſiege, the number of inhabitants in the city amounted to 72,000; in the ſecond they diminiſhed to 28,000; and they were, when Mr Wraxal was there, between 17 and 18,000, of which ſcarce 2000 were Huguenots. The houſes of this city are fine, and ſupported with piazzas, under which perſons may walk in all weathers; and the ſtreets in general are as ſtraight as a line. There are ſeveral handſome churches, and other ſtructures, beſides a remarkable pump in the ſquare of Dauphiny, which throws out the water through ſeveral pipes. There are no remains of the old fortifications, except on the ſide of the harbour, where there are bulwarks and ſtrong towers to defend the entrance. The new fortifications are in the manner of Vauban. Before Canada was ceded to England, and New Orleans to Spain, the trade of Rochelle was very lucrative. It revived about the year 1773, and, beſide that to the coaſt of Guinea and the Eaſt Indies, the inhabitants carried on a conſiderable trade in wines, brandy, ſalt, paper, linen cloth, and ſerge. It is ſeated on the ocean, in W. Long. 1. 11. N. Lat. 46. 10.

ROCHESTER, a city of Kent, in England, is ſituated on the Medway, ſeven miles and a half north of Maidſtone, and 30 from London. It appears to have been one of the Roman ſtations, from the bricks in the walls, as well as the Roman coins that have been found about it. It has three pariſh churches built with ſtone and flints, beſides the cathedral, which is but a mean ſtructure. This little city, which was made a biſhop's ſee by king Ethelbert, anno 604, has met with many misfortunes. In 676, it was ſacked by Eldred king of Mercia; in 839 and 885, beſieged by the Danes, but reſcued by king Alfred. About 100 years after, it was beſieged by king Ethelred, and forced to pay L. 100. Anno 999 it was taken and plundered by the Danes. Anno 1088 it was beſieged and taken by William Rufus. In king John's time it was taken from the Barons, after three month's ſiege; and the very next year, viz. 1256, its caſtle, founded by William the Conqueror, was ſtormed and taken by ſeveral of the Barons, under the French king's ſon. In the reign of Henry III. it was beſieged by Simon Montford, who burnt its then wooden bridge and tower, and ſpoiled the church and priory, and then marched off. This city has alſo been ſeveral times deſtroyed by fire, viz. in 1130, on June 3. in 1137, and in 1177; after which it is ſaid to have continued deſolate till 1225, when it was repaired, ditched, and walled round. In the Saxon heptarchy there were three mints in Rocheſter, two for the king and one for the biſhop. In 1281, its old wooden bridge was carried off by the ice, in a ſudden thaw after a froſt which had made the Medway paſſable on foot. Another was built in the reign of Richard II. but pulled down again, on the rumour of an invaſion from France. It was afterwards reſtored, but ſo often ſubject to expenſive repairs, by reaſon of the rapid courſe of the river under it, as well as the great breadth and depth of it, that in the reign of Edward III. it was reſolved to build a new bridge of ſtone; and the ſame was begun, and in a manner completed, at the expence of Sir John Cobham and Sir Robert Knolles, Edward III.'s generals, out of the ſpoils they had taken in France. It has 21 arches. The town is governed by a mayor, recorder, 12 aldermen, 12 common-councilmen, a town-clerk, three ſerjeants at mace, and a water-bailiff. To its cathedral belong a dean and ſix prebendaries. Gundulph's tower ſtands on the north ſide of the cathedral, and is ſuppoſed to have been built by the biſhop, as a place of ſecurity for the treaſures and archives of that church and ſee. Some ſuppoſe it to have been intended for a bell tower, and others for an eccleſiaſtical priſon; but whatever might be its deſtination, its machicolations, its loop-hole windows, and the thickneſs of its walls, ſhows ſtrength and defence were conſidered as neceſſary. This tower was 60 feet high, but ſome part has lately fallen down; the walls are ſix feet thick, and contain within them an area of 20 feet ſquare: it was divided into five floors or ſtories of unequal height, and had a communication with the upper part of the church, by means of an arch or bridge, the ſteps of which are ſtill viſible. It is ſuppoſed to have been erected after the cathedral was built. For the maintainance of its bridge, certain lands are tied down by parliament, to which it has ſent members from the firſt. The town-houſe, built in the year 1687, for the courts, aſſizes, and ſeſſions, and the charity-ſchool, are two of the beſt public buildings here.—A mathematical ſchool was founded here, and an alms-houſe for lodging ſix poor travellers every night, and allowing them 4 d. in the morning when they depart, except perſons contagiouſly diſeaſed, rogues, and proctors. In the ſummer here are always ſix or eight lodgers, who are admitted by tickets from the mayor. The Roman Watling-ſtreet runs through this town from Shooters-Hill to Dover. The mayor and citizens hold what is called an admiralty-court once a-year for regulating the oyſter-fiſhery in the creeks and branches of the Medway that are within their juriſdiction, and for proſecuting the cable-hangers, as they are called, who dredge and fiſh for oyſters without being free, by having ſerved ſeven years apprenticeſhip to a fiſherman who is free of the fiſhery. Every licenſed dredger pays 6s. 8d. a-year to the ſupport of the courts, and the fiſhery is now in a flouriſhing way. Part of the caſtle is kept in repair, and is uſed as a magazine, where a party of ſoldiers do conſtant duty. The bridge was repaired in 1744, and palliſadoed with new iron rails. Rocheſter contains about 700 houſes, and 2000 inhabitants. It conſiſts of only one principal ſtreet which is wide, and paved with flints. The houſes are generally well built with brick, and inhabited by tradeſmen and innkeepers. It has alſo four narrow ſtreets; but no ſort of manufactory is carried on here. Stroud is at the weſt end of this place, and Chatham at the eaſt. It is 27 miles north-weſt by weſt of Canterbury, and 30 ſouth-eaſt by eaſt of London. Long. 0. 36. E. Lat. 51. 23. N.

Rochester, Rock.

ROCHESTER (earl of). See WILMOT.

ROCK, a large maſs or block of hard ſtone rooted in the ground. See MOUNTAIN, PETRIFACTION, and STONE.

ROCK, in ornithology, a ſpecies of VULTURE.

Rock Baſons are cavities or artificial baſons of different ſizes, from ſix feet to a few inches diameter, cut in the ſurface of the rocks for the purpoſe, as is ſuppoſed, of collecting the dew and rain pure as it deſcended from the heavens, for the uſe of ablutions and purifications, preſcribed in the druidical religion; theſe, eſpecially the dew, being deemed the pureſt of all

Grofier's England and Wales.

Rock. Rocket.

fluids. There are two ſorts of theſe baſons, one with lips or communications between the different baſons, the other ſimple cavities. The lips as low as the bottom of the baſons, which are horizontal, and communicate with one ſomewhat lower, ſo contrived that the contents fall by a gradual deſcent through a ſucceſſion of baſons either to the ground, or into a veſſel ſet to receive it. The baſons without lips might be intended for reſervoirs to preſerve the rain or dew in its original purity without touching any other veſſel, and was perhaps uſed for the druid to drink, or waſh his hands, previous to officiating at any high ceremony, or elſe to mix with their miſletoe.

Some of theſe baſons are ſo formed as to receive the head and part of the human body; one of this kind is found on a rock called king Arthur's bed, in the pariſh of North Hall in Cornwall, where are alſo others, called by the country people Arthur's troughs, in which they ſay he uſed to feed his dogs.

Rock-Cryſtal, in natural hiſtory, otherwiſe called *ſprig-cryſtal*, a name given to the third order of cryſtals, from their being affixed to a rock or other ſolid body. See Crystal.

Rock-Salt. See Salt.

Rock-Oil. See Petroleum.

Rock-Fiſh. See Gobius.

ROCKET, an artificial fire work, conſiſting of a cylindrical caſe of paper, filled with a compoſition of certain combuſtible ingredients; which, being tied to a ſtick, mounts into the air, and then burſts. See Pyrotechny.

Theory of the Flight of Sky-Rockets. Mariotte takes the riſe of rockets to be owing to the impulſe or reſiſtance of the air againſt the flame. Dr Deſagulier accounts for it otherwiſe.

Conceive the rocket to have no vent at the choak, and to be ſet on fire in the conical bore; the conſequence will be, either that the rocket would burſt in the weakeſt place, or, if all its parts were equally ſtrong, and able to ſuſtain the impulſe of the flame, the rocket would burn out immoveable. Now, as the force of the flame is equable, ſuppoſe its action downwards, or that upwards, ſufficient to lift 40 pounds. As theſe forces are equal, but their directions contrary, they will deſtroy each other's action.

Imagine then the rocket opened at the choak; by this means the action of the flame downwards is taken away, and there remains a force equal to 40 pounds acting upwards, to carry up the rocket, and the ſtick it is tied to. Accordingly, we find that if the compoſition of the rocket be very weak, ſo as not to give an impulſe greater than the weight of the rocket and ſtick, it does not riſe at all; or if the compoſition be ſlow, ſo that a ſmall part of it only kindles at firſt, the rocket will not riſe.

The ſtick ſerves to keep it perpendicular; for if the rocket ſhould begin to ſtumble, moving round a point in the choak, as being the common centre of gravity of rocket and ſtick, there would be ſo much friction againſt the air by the ſtick between the centre and the point, and the point would beat againſt the air with ſo much velocity, that the friction of the medium would reſtore it to its perpendicularity.

When the compoſition is burnt out, and the impulſe upwards is ceaſed, the common centre of gravity is brought lower towards the middle of the ſtick; by which means the velocity of the point of the ſtick is decreaſed, and that of the point of the rocket increaſed; ſo that the whole will tumble down, with the rocket-end foremoſt. Rocket, ‖ Rodney.

All the while the rocket burns, the common centre of gravity is ſhifting and getting downwards, and ſtill the faſter and the lower as the ſtick is the lighter, ſo that it ſometimes begins to tumble before it be burnt out; but when the ſtick is a little too heavy, the weight of the rocket bearing a leſs proportion to that of the ſtick, the common centre of gravity will not get ſo low but that the rocket will riſe ſtraight, though not ſo faſt.

Rocket, in botany. See Brassica.

ROCKINGHAM, a town in Northamptonſhire, in England, 87 miles from London, ſtands on the river Welland. It has a charity-ſchool, a market on Thurſday, and a fair on Sept. 8. for five days. Its foreſt was reckoned one of the largeſt and richeſt of the kingdom, in which William the Conqueror built a caſtle; it extended, in the time of the ancient Britons, almoſt from the Welland to the Nen, and was noted formerly for iron-works, great quantities of ſlags, *i. e.* the refuſe of the iron-ore, being met with in the adjacent fields. It extended, according to a ſurvey in 1641, near 14 miles in length, from the weſt end of Middleton-Woods to the town of Mansford, and five miles in breadth, from Brigſtock to the Welland; but is now diſmembered into parcels, by the interpoſition of fields and towns, and is divided into three bailiwicks. In ſeveral of its woods a great quantity of charcoal is made of the tops of trees, of which many waggon-loads are ſent every year to Peterborough. There is a ſpacious plain in it called Rockinghamſhire, which is a common to the four towns of Cottingham, Rockingham, Corby, and Gretton. King William Rufus called the council here of the great men of the kingdom. W. Long. 0. 46. N. Lat. 52. 32.

Rocking-Stones. See *Rocking-Stones.*

ROCKOMBOLE. See Allium.

ROD, a land meaſure of 16 feet and a half; the ſame with perch and pole.

Black Rod. See *Usher of the Black Rod.*

Fiſhing Rod, a long taper rod or wand, to which the line is faſtened for angling. See *Fishing-Rod.*

RODNEY (George Bridges), Lord Rodney, was born in the year 1718. Of the place of his birth and the rank of his anceſtors we have not been able to procure any well authenticated account. His father was a naval officer; and commanding, at the time of his ſon's birth, the yacht in which the king, attended by the Duke of Chandos, was paſſing to or from Hanover, he aſked and obtained leave to have the honour of calling his infant ſon *George Bridges*. The royal and noble godfathers adviſed Captain Rodney to educate his boy for his own profeſſion, promiſing, as we have been told, to promote him as rapidly as the merit he ſhould diſplay and the regulations of the navy would permit.

Of young Rodney's early exertions in the ſervice of his country, nothing, however, is known to the writer of this abſtract, nor, indeed, any thing of ſufficient importance to be inſerted in articles ſo circumſcribed as all our biographical ſketches muſt be, till 1751, when we find him, in the rank of a Commodore, ſent out to make

Rodney. make accurate diſcoverics reſpecting an iſland which was ſuppoſed to lie about 50° N. L. and about 300 leagues W. of England: but he returned without having ſeen any ſuch iſland as that which he was appointed to ſurvey. In the war which ſoon followed this voyage of diſcovery, he was promoted to the rank of a rear-admiral, and was employed to bombard Havre-de-Grace; which in 1759 and 1760 he conſiderably damaged, together with ſome ſhipping. In 1761 he was ſent on an expedition againſt Martinico, which was reduced in the beginning of the year 1762, and about the ſame time St Lucia ſurrendered to Captain Harvey. Both theſe iſlands were reſtored to the French at the peace of 1763.

In reward for his ſervices, he was created a knight of the bath; but being inattentive, as many ſeamen are, to the rules of economy, his circumſtances became ſo embarraſſed that he was obliged to fly from his country, with very ſlight hopes of ever being able to return. He was in France when the policy of that court induced them take a decided part with America againſt Great Britain; and it is ſaid that ſome men in power, no ſtrangers to the deſperate ſtate of Sir George's affairs, offered him a high command in the French navy, if he would carry arms againſt his own country. This offer he rejected with becoming indignation. Soon after this gallant behaviour, the Duke de Chartres, afterwards the infamous Orleans, told Sir George that he was to have a command in the fleet which was to be oppoſed to that under the command of his countryman Mr Keppel; and with an inſulting air aſked him what he thought would be the conſequence of their meeting? "That my countryman will carry your Highneſs with him to learn Engliſh." was the high-ſpirited reply.—When the diviſions, which the mutual recriminations of Admiral Keppel and Sir Hugh Palliſer excited in the Britiſh navy, made it difficult for the miniſtry to procure experienced, and at the ſame time popular, commanders for their fleets, Lord Sandwich wrote to Sir George Bridges Rodney, offering him a principal command: but the difficulty was for the veteran to find money to pay his accounts in France, ſo that he might be permitted to leave that kingdom. The money, it has been repeatedly affirmed, was advanced to him by the courtiers whoſe offer he had before indignantly rejected. He arrived, therefore, in England, and was again employed in the ſervice of his country. His firſt exploit after his appointment was in January 1780, when he took 19 Spaniſh tranſports bound to Cadiz from Bilboa, together with a 64 gun ſhip and 5 frigates, their convoy. On the 16th of the ſame month he fell in with the Spaniſh fleet, conſiſting of 11 ſail of the line, under the command of Don Juan de Langara; of which one was blown up during the engagement, five were taken and carried into Gibraltar, among which was the admiral's ſhip, and the reſt were much ſhattered. In April the ſame year, he fell in with the French fleet, under the command of Admiral Guichen, at Martinico, whom he obliged to fight, and whom he completely beat; though from the ſhattered ſtate of his own fleet, and the unwillingneſs of the enemy to riſk another action, he took none of their ſhips. The ſucceſsful efforts of this gallant admiral during the year 1780 were generally applauded through the nation. He received the thanks of both Houſes of Parliament, and addreſſes of thanks from various parts of Great Britain, and the iſlands to which his victories were more particularly ſerviceable. In December the ſame year, he made an attempt, together with General Vaughan, on St Vincent's, but failed. In 1781, he continued his exertions, with much ſucceſs, in defending the Weſt India iſlands; and, along with the above named general, he conquered St Euſtatius; on which occaſion his conduct to the inhabitants has been much, though perhaps unjuſtly, cenſured. The iſland was certainly a neſt of contraband traders. Rodney.

On the 12th of April 1782, he came to a cloſe action with the French fleet under Count de Graſſe; during which he ſunk one ſhip and took five, of which the admiral's ſhip, the Ville de Paris, was one. The following year brought peace; but, as a reward for his numerous ſervices, he had a grant of L. 2000 a-year for himſelf and his two ſucceſſors. He had long before been created a baronet, was rear-admiral of Great Britain, and at length was juſtly promoted to the peerage, by the title of Baron Rodney of Stoke, Somerſetſhire, and made vice-admiral of Great Britain. He was once alſo governor of Greenwich Hoſpital.

Lord Rodney had been twice married; firſt to the ſiſter of the Earl of Northampton, and ſecondly to the daughter of John Clies, Eſq; with whom he did not reſide for ſeveral years before his death, which happened on the 24th of May 1792. He was ſucceeded in title and eſtates by his ſon George, who married in 1781 Martha, daughter of the Right Hon. Alderman Harley, by whom he has iſſue.

Of the private life of Lord Rodney we know but little. His attention to the wants of the ſeamen, and the warrant officers ſerving under him, indicated that humanity which is always allied to true courage. He has often, from the number of diſhes which his rank brought to his table, ſelected ſomething very plain for himſelf, and ſent the reſt to the midſhipmen's meſs.—His public tranſactions will tranſmit his name with honour to poſterity; his bravery was unqueſtionable, and his ſucceſs has been ſeldom equalled. It has, indeed, been very generally ſaid, that his ſkill in naval tactics was not great, and that he was indebted to the ſuperior abilities of Capt. Young and Sir Charles Douglas for the manœuvres by which he was ſo ſucceſsful againſt Langara and De Graſſe. But, ſuppoſing this to be true, it detracts not from his merit. A weak or fooliſh commander could not always make choice of the ableſt officers for his firſt captains, nor would ſuch a man be guided by their advice.

Whatever was Lord Rodney's ſkill in the ſcience of naval war, or however much he may have been beholden to the counſels of others, he certainly poſſeſſed himſelf the diſtinguiſhed merit of indefatigable exertion; for he never omitted any thing within the compaſs of his power to bring the enemy to action. He therefore unqueſtionably deſerves the reſpect and the gratitude of his country. In the year 1783 the Houſe of Aſſembly in Jamaica voted L. 1000 towards erecting a marble ſtatue to him, as a mark of their gratitude and veneration for his gallant ſervices, ſo timely and glorioufly performed for the ſalvation of that iſland in particular, as well as the whole of the Britiſh Weſt India iſlands and trade in general. We have not, however, heard of any ſuch tribute being paid to him in Britain either before or ſince his death.

ROE,

ROE, the feed or fpawn of fifh. That of the male fifhes is ufually diftinguifhed by the name of *foft roe*, or *milt*; and that of the female, *hard roe*, or *fpawn*. So inconceivably numerous are thefe ovula or fmall eggs, that M. Petit found 342,144 of them in a carp of 18 inches; but M. Leuwenhoeck found in a carp no more than 211,629. This laft gentlemen obferves, that there are four times this number in a cod; and that a common one contains 9,344,000 eggs.

Roe, in zoology. See Cervus.

ROELLA, in botany: A genus of the monogynia order, belonging to the pentandria claſs of plants; and in the natural method ranking under the 29th order, *Campanaceæ*. The corolla is funnel-ſhaped, with its bottom fhut up by ſtamiferous valvulus; the ſtigma is bifid; the capſule bilocular, and cylindrical inferior.

ROGA, in antiquity, a preſent which the emperors made to the ſenators, magiſtrates, and even to the people; and the popes and patriarchs to their clergy. Theſe rogæ were diſtributed by the emperors on the firſt day of the year, on their birth-day, or on the *natalis dies* of the cities; and by the popes and patriarchs in paſſion-week. Roga is alſo uſed for the common pay of the ſoldiers.

ROGATION (ROGATIO), in the Roman juriſprudence, a demand made by the conſuls or tribunes of the Roman people, when a law was propoſed to be paſſed. *Rogatio* is alſo uſed for the decree itſelf made in conſequence of the people's giving their aſſent to this demand; to diſtinguiſh it from a *ſenatus conſultum*, or decree of the ſenate.

Rogation-Week, the week immediately ſucceeding Whitſunday; ſo called from the three feaſts therein, viz on Monday, Tueſday, and Wedneſday.

ROGER DE HOVEDEN, a learned man of the 13th century, was born in Yorkſhire, moſt probably at the town of that name, now called *Howden*, ſome time in the reign of Henry I. After he had received the firſt parts of his education in his native country, he ſtudied the civil and canon law, which were then become the moſt faſhionable and lucrative branches of learning. He became domeſtic chaplain to Henry II. who employed him to tranſact ſeveral eccleſiaſtical affairs; in which he acquitted himſelf with honour. But his moſt meritorious work was, his Annals of England, from A. D. 731, when Bede's Eccleſiaſtical Hiſtory ends, to A. D. 1202. This work, which is one of the moſt voluminous of our ancient hiſtories, is more valuable for the ſincerity with which it is written, and the great variety of facts which it contains, than for the beauty of its ſtyle, or the regularity of its arrangement.

ROGUE, in law, an idle ſturdy beggar; who by ancient ſtatutes is for the firſt offence called a *rogue of the firſt degree*, and puniſhed by whipping, and boring through the griſtle of the right ear with a hot iron; and for the ſecond offence, is termed a *rogue of the ſecond degree*, and, if above 18 years of age, ordered to be executed as a felon.

ROHAN (Peter de), Chevalier de Gié, and marſhal of France, better known by the name of *Marſhal de Gié*, was the ſon of Louis de Rohan, the firſt of the name, lord of Guémené and Montauban, and deſcended of one of the moſt ancient and moſt illuſtrious families of the kingdom. The family of Rohan, before the Revolution, held the rank of prince in France in conſequence of its deriving its origin from the firſt ſovereigns of Brittany, and clearly admitted by the dukes of Brittany themſelves in the ſtates general of that province held in 1088. The houſe of Rohan had ſtill another advantage, which was common to it with very few families, even the moſt diſtinguiſhed among the princes, namely, that inſtead of having been aggrandiſed by the wealth procured from alliances, it had held in itſelf for ſeven centuries the largeſt poſſeſſions of any family in the kingdom.

One of the moſt diſtinguiſhed branches of this family was Peter, the ſubject of the preſent article. Louis XI. rewarded his bravery with the ſtaff of marſhal of France in 1475. He was one of the four lords who governed the kingdom during the indiſpoſition of that prince at Chinon in 1484. Two years afterwards he oppoſed the attacks of the archduke of Auſtria upon Picardy. He commanded the van-guard at the battle of Fornoue in 1495, and ſignalized himſelf much in that engagement. His bravery procured him the countenance and confidence of Louis XII. who appointed him his prime counſellor, and general of the army in Italy; but theſe advantages he loſt, by incurring the diſpleaſure of Anne of Brittany the queen.

The marſhal had ſtopped ſome of her equipage on the road to Nantz; for which that vindictive princeſs prevailed on her huſband to enter into a proceſs againſt him before the parliament of Toulouſe, at that time the moſt rigorous and ſevere in the kingdom. He was on the 15th of February 1506 found guilty, baniſhed from the court, and deprived of the privileges and emoluments of his office for five years. The expence of this proſecution amounted to more than 31,000 livres, and it did no honour either to the king or the queen. If indeed it be true, that the queen was never ſo much delighted as with the humiliation of her enemies, ſhe had good reaſon to be ſatisfied here. John of Authon, who had entered into a pretty full detail of this affair, reports that Gié, being removed to the *Chateau de Dreux*, became an object of ridicule to the witneſſes who had ſworn againſt him. He wore a long white beard, and, quite full of the thoughts of his diſgrace, took it on one occaſion in his hands and covered his face with it. An ape, belonging to Alain d'Albret, count of Dreux, jumped from a bed where his maſter was repoſing himſelf, and attacked the beard of Gié, who, with ſome difficulty, extricated himſelf. This ſcene not only occaſioned much laughter to the whole company who were preſent, but likewiſe became inſtantly the ſubject of the farces and mummeries which were then acting in France. Even the ſchool-boys made a repreſentation of it, where, alluding to the name of the queen, they ſaid, that there was a marſhal who wiſhed to ſhoe an aſs (*un ane*), but that he received ſuch a blow with the foot, as threw him over the wall into the garden. Mareſchal de Gié died at Paris, the 22d April 1513, perfectly diſguſted with courts and grandeur.

ROHAN (Henry duke of), peer of France, and prince of Leon, was born at the Chateau de Blein in Brittany in 1579. Henry IV. under whoſe eyes he gave diſtinguiſhed proofs of his bravery at the ſiege of Amiens, when only 16 years of age, loved him with as much affection as if he had been his own ſon. After the death of Henry, he became chief of the Calviniſts in

Rohan. in France; and was equally formidable for his genius as his ſword. In defence of the civil and religious rights of his party, he maintained three wars againſt Louis XIII. The firſt, which terminated to the advantage of the Proteſtants, broke out when that prince wiſhed to eſtabliſh the Romiſh religion in Le Bearn: the ſecond, becauſe of the ſiege which Cardinal De Richlieu cauſed to be laid to Rochelle: and the third, when that place was beſieged a ſecond time. The conſequences of this war are ſufficiently known: Rochelle ſurrendered: and the duke de Rohan perceiving, that after the taking of this place, the majority of his party were endeavouring to make up matters with the court, ſucceeded in procuring for them a general peace in 1629, upon very honourable and advantageous terms. The only ſacrifice of importance which the Huguenots were obliged to make, was their fortifications; which put it out of their power to renew the war. Some factious perſons, diſſatisfied with ſeeing their fortreſſes fall into their enemies' hands, were ready to accuſe their general of having ſold them. This great man, undeſerving of ſuch odious ingratitude, preſented his breaſt to theſe enraged malcontents, and ſaid, "Strike, ſtrike! I wiſh to die by your hands, after I have hazarded my life in your ſervice." The peace of 1629 having entinguiſhed the flame of civil war, the duke de Rohan, no longer of uſe to his party, and become diſagreeable at court, retired to Venice. There is a very particular anecdote of him, extracted from the Memoirs of the ducheſs of Rohan, Margaret of Bethune, daughter of the famous Sully. Whilſt the duke de Rohan was at Venice, a propoſal was made to him from the Porte, that for 200,000 crowns, and an annual tribute of 20,000, the Grand Signior would give him the iſland of Cyprus, and fully inveſt him with the dignity and prerogatives of king. The duke was warmly inclined to comply with this propoſal, and to ſettle in the iſland the Proteſtant families of France and Germany. He negociated this buſineſs at the Porte by means of the intervention of the patriarch Cyril, with whom he had much correſpondence; but different circumſtances, and in particular the death of the patriarch, occurred to break off the treaty. The republic of Venice choſe Rohan for their commander in chief againſt the Imperialiſts; but Louis XIII. took him from the Venetians, and ſent him ambaſſador into Swiſſerland, and into the Griſons. He wiſhed to aſſiſt theſe people in bringing back La Valteline under their obedience, the revolt of which the Spaniards and Imperialiſts encouraged. Rohan, being declared general of the Griſons, after many victories, drove the German and Spaniſh troops entirely from La Valteline in 1633. He defeated the Spaniards again in 1636 at the banks of the lake of Côme. France, not thinking it proper to withdraw her troops, the Griſons roſe up in arms, and the duke de Rohan, not ſatisfied with the conduct of the court, entered into a ſpecial treaty with them the 28th March 1637. This hero, fearing the reſentment of cardinal de Richlieu, retired to Geneva, with a view to join his friend the duke of Saxe-Weimar, who wiſhed him to undertake the command of his army, then ready to engage the Imperialiſts near Rhinfield. Although he declined this honour, yet he took the command of the regiment of Naſſau, with which he threw the enemy into confuſion; but was himſelf wounded, February 28. 1683, and died of his wounds the 13th of April following, at the age of 59. He was interred May 27th, in the church of St Pierre in Geneva, where there is a magnificent monument of marble erected to his memory, having on it the moſt illuſtrious actions of his life. The duke de Rohan was one of the greateſt generals of his time, equal to the princes of Orange, and capable, like them, of ſettling a commonwealth; but more zealous than they for religion, or at leaſt appearing to be ſo. He was vigilant and indefatigable, not allowing himſelf any pleaſures which might take off his attention from his neceſſary employments, and well qualified for being the head of a party; a poſt very difficult to retain, and in which he had to fear equally from his enemies and his friends. It is in this light that Voltaire has viewed this illuſtrious character, when he compoſed the following verſe: Rohan.

Avec tous les talens le Ciel l'avoit fait naître:
Il agit en Heros; en Sage il écrivit.
Il fut même grand homme en combattant ſon Maître,
Et plus grand lorſqu'il le ſervit.

His military virtues were much heightened by the ſweetneſs of his diſpoſition, his affable and courteous manners, and by a generoſity which had few examples. Neither ambition, pride, nor a view of gain, could ever be traced in his character. He was wont to ſay, that "true glory and a zeal for the public good never dwelt where ſelf-intereſt reigned." Rohan had always a particular regard for Henry the Fourth: "Truly (ſaid he, ſometimes after the death of that prince) when I think of him, my heart is ready to break. A wound received in his preſence would have afforded me more ſatisfaction than now to gain a battle. I would have valued an encomium from him in this art, of which he was the greateſt maſter of his time, more than the united praiſes of all the commanders now living." He wrote ſeveral intereſting performances: 1. The Intereſts of Princes, printed at Cologne in 1666, in 12mo: in which work he fully examines the public intereſts of all the princes of Europe. 2. The Perfect General, or an abridgment of the wars from Cæſar's Commentaries, in 12mo. In this he makes it appear, that a knowledge of the tactics of the ancients might be of much uſe to the moderns. 3. A Treatiſe on the Corruption of the ancient Militia, 4. A Treatiſe on the Government of the Thirteen Provinces. 5. Memoirs; the beſt edition of which is in 2 vols 12mo. They contain the hiſtory of France from 1610 to 1629. 6. A Collection of ſome Political Diſcourſes on State Affairs, from 1612 to 1629, 8vo, Paris, 1644, 1693, 1755; with the Memoirs and Letters of Henry Duke de Rohan relative to the war of La Valteline, 3 vols 12mo, Geneva, 1757. This was the firſt edition which appeared of theſe curious memoirs: We owe it to the great attention and diligence of M. le Baron de Zurlauben, who publiſhed them from different authentic manuſcripts. He likewiſe ornamented this edition with geographical, hiſtorical, and genealogical notes, and a preface, which contains an abridged, but highly intereſting life, of the duke de Rohan, author of the memoirs. The abbé Pérau has alſo written a life of him, which occupies the 21ſt and 22d volumes of the Hiſtory of the Illuſtrious Men of France. Some want of ſpirit might be excuſed in the detail of wars finiſhed upwards of 140

years

Rohault Roll.

years ago; yet the memoirs of the duke de Rohan ſtill afford conſiderable pleaſure in the perusal. He tells his ſtory with humour, with ſufficient exactneſs, and in ſuch a ſtyle as procures the confidence of the reader.

ROHAULT (James), a celebrated Carteſian philoſopher, was the ſon of a merchant of Amiens, where he was born in 1620. He became well ſkilled in the mathematics, and taught them at Paris, where he became acquainted with M. Clerſelier, an advocate, who gave him his daughter in marriage. Rohault alſo taught philoſophy in the ſame city with uncommon applauſe. He there improved the arts, and gave excellent leſſons to the artiſts and workmen. He died at Paris in 1675. He wrote, in French, 1. A Treatiſe on Natural Philoſophy. 2. The Elements of the Mathematics. 3. A Treatiſe on Mechanics, which is very curious. 4. Philoſophical Converſations; and other works. His Phyſics have been tranſlated into Latin, by Dr Samuel Clarke, with notes, in which the Carteſian errors are corrected upon the Newtonian ſyſtem.

ROLANDRA, in botany: A genus of the polygamia ſegregata order, belonging to the ſyngeneſia claſs of plants; and in the natural method ranking under the 49th order, *Compoſitæ*. The common calyx conſiſts of diſtinct *foliuli*, between each of which are ſhort *ſquamæ*, the whole forming a round head. The partial calyx is bivalved. The corolla is ſmall and funnel-ſhaped, the tube ſmall as a thread, the *laciniæ* ſhort and acute. The ſtamina are five; the ſtyle bifid. It has no other ſeed veſſel except the partial calyx, which contains a long three-ſided ſeed. Of this there is only one ſpecies, viz. the Argentea; a native of the Weſt Indies, and found in copſes and waſte lands.

ROLL, in manufactories, ſomething wound and folded up in a cylindrical form.

Few ſtuffs are made up in rolls, except ſatins, gauſes, and crapes; which are apt to break, and take plaits not eaſy to be got out, if folded otherwiſe. Ribbons, laces, gallons, and paduas of all kinds, are alſo thus rolled.

A roll of tobacco, is tobacco in the leaf, twiſted on the mill, and wound twiſt over twiſt about a ſtick or roller. A great deal of tobacco is ſold in America in rolls of various weights; and it is not till its arrival in England, Spain, France, and Holland, that it is cut.

A roll of parchment, properly denotes the quantity of 60 ſkins.

The ancients made all their books up in the form of rolls; and in Cicero's time the libraries conſiſted wholly of ſuch rolls.

ROLL, in law, ſignifies a ſchedule or parchment which may be rolled up by the hand into the form of a pipe.

In theſe ſchedules of parchment all the pleadings, memorials, and acts of court, are entered and filed by the proper officer; which being done, they become records of the court. Of theſe there are in the exchequer ſeveral kinds, as the great wardrobe roll, the cofferer's roll, the ſubſidy-roll, &c.

Roll is alſo uſed for a liſt of the names of perſons of the ſame condition, or of thoſe who have entered into the ſame engagement. Thus a court-roll of a manor, is that in which the names, rents, and ſervices, of each tenant are copied and enrolled.

Calves-head Roll, a roll in the two temples, in which every bencher is taxed yearly at 2 s. every barriſter at 1 s. 6 d. and every gentleman under the bar at 1 s. to the cook and other officers of the houſe, in conſideration of a dinner of calves-heads provided in Eaſter-term.

Muſter-Roll, that in which are entered the ſoldiers of every troop, company, regiment, &c. As ſoon as a ſoldier's name is written down on the roll, it is death for him to deſert.

Rolls-Office, is an office in Chancery-lane, London, appointed for the cuſtody of the rolls and records in chancery.

Maſter of the Rolls. See *Master of the Rolls*.

Rider-Roll, a ſchedule of parchment frequently ſewed or added to ſome part of a roll or record.

Rolls of Parliament, are the manuſcript regiſters or rolls of the proceedings of the ancient parliaments, which before the invention of printing were all engroſſed on parchment, and proclaimed openly in every county. In theſe rolls are alſo contained a great many deciſions of difficult points of law, which were frequently in former times referred to the deciſion of that high court.

ROLL, or *Roller*, is alſo a piece of wood, iron, braſs, &c. of a cylindrical form, uſed in the conſtruction of ſeveral machines, and in ſeveral works and manufactories.

Thus in the glaſs manufacture they have a running-roll, which is a thick cylinder of caſt braſs, which ſerves to conduct the melted glaſs to the end of the table on which large looking-glaſſes, &c. are caſt.

Founders alſo uſe a roll to work the ſand which they uſe in making their moulds.

The preſſes called *calendars*, as ſerving to calendar ſtuffs withal, conſiſt, among other eſſential parts, of two rollers. It is alſo between the two rollers that the waves are given to ſilks, mohairs, and other ſtuffs proper to be tabbied.

Impreſſions from copper-plates are alſo taken by paſſing the plate and paper between two rollers. See *Rolling-preſs PRINTING*.

Rolls, in flatting-mills, &c. are two iron inſtruments of a cylindrical form, which ſerve to draw or ſtretch out plates of gold, ſilver, and other metals.

Rolls, in ſugar-works, are two large iron barrels which ſerve to bruiſe the canes, and to expreſs the juice. Theſe are caſt hollow, and their cavities are filled up with wood, the cylinders of which are properly the rollers.

ROLLER, in ſurgery, a long and broad bandage, uſually of linen-cloth, rolled round any part of the body, to keep it in, or diſpoſe it to a ſtate of health.

ROLLI (Paul), was born at Rome in 1687. He was the ſon of an architect, and a pupil of the celebrated Gravina, who inſpired him with a taſte for learning and poetry. An intelligent and learned Engliſh lord having brought him to London, introduced him to the royal family as a maſter of the Tuſcan language. Rolli remained in England till the death of queen Caroline his protector, and the patroneſs of literature in general. He returned to Italy in 1747, where he died in 1767, in the 80th year of his age, leaving behind him a very curious collection in natural hiſtory, &c. and a valuable and well choſen library. His principal works firſt appeared

Roll || Rolli.

Rollin. peared in London in 1735, in 8vo. They consist of odes in blank verse, elegies, songs, and other things, after the manner of Catullus. There is likewise, by him a Collection of Epigrams, printed at Florence in 1776. in 8vo, and preceded with his life by the Abbé Fondini. What Martial said of his own Collection may be said of this, "That there are few good, but many indifferent or bad, pieces in it." Rolli, however, bore the character of one of the best Italian poets of his age. During his stay in London, he procured editions of several authors of his own country. The principal of these were, the Satires of Ariosto, the Burlesque Works of Berni, Varchi, &c. 2 vols, in 8vo, which possess considerable merit. The Decameron of Boccace, 1727, in 4to and folio; in which he has faithfully copied the celebrated and valuable edition published by the *Juntes* in 1527: and, lastly, of the elegant Lucretia of Marchetti, which, after the manuscript was revised, was printed at London in 1717, in 8vo, through the influence and attention of Rolli. This edition is beautiful; but the work is thought of pernicious tendency. There are likewise, by him, translations into Italian verse of the Paradise Lost of Milton, printed at London in folio in 1735; and of the Odes of Anacreon, London 1739, in 8vo.

ROLLIN (Charles), a justly celebrated French writer, was the son of a cutler at Paris, and was born there on the 30th of January 1661. He studied at the college Du Plessis, in which he obtained a bursary through the interest of a Benedictine monk of the White Mantle, whom he had served at table, and who discovered in him some marks of genius. Here he acquired the regard of M. Gobinet, principal of that college, who had a particular esteem for him. After having studied humanity and philosophy at the college of Du Plessis, he applied to divinity three years at the Sorbonne; but he did not prosecute this study, and never rose in the church higher than to the rank of a tonsured priest. He afterwards became professor of rhetoric in the same college; and, in 1688, succeeded Horsan, his master, as professor of eloquence, in the royal college. No man ever exercised the functions of it with greater eclat: he often made Latin orations, to celebrate the memorable events of the times; and frequently accompanied them with poems, which were read and esteemed by every body. In 1694, he was chosen rector of the university; and continued in that office two years, which was then a great mark of distinction. By virtue of his office, he spoke the annual panegyric upon Louis XIV. He made many very useful regulations in the university; and particularly revived the study of the Greek language, which was then much neglected. He substituted academical exercises in the place of tragedies; and introduced the practice which had been formerly observed, of causing the students to get by heart passages of Scripture. He was a man of indefatigable attention; and trained innumerable persons, who did honour to the church, the state, and the army. The first president Portial was pleased one day to reproach Rollin in a jocular strain, as if he exceeded even himself in doing business: to whom Rollin replied, with that plainness and sincerity which was natural to him, "It becomes you well, Sir, to reproach me with this; it is this habit of labour in me which has distinguished you in the place of advocate-general, which has raised you to that of first president: you owe the greatness of your fortune to me." Rollin.

Upon the expiration of the rectorship, cardinal Noailles engaged him to superintend the studies of his nephews, who were in the college of Laon; and in this office he was agreeably employed, when, in 1699, he was with great reluctance made coadjutor to the principal of the college of Beauvais. This college was then a kind of desert, inhabited by very few students, and without any manner of discipline: but Rollin's great reputation and industry soon re-peopled it, and made it that flourishing society it has ever since continued. In this situation he continued till 1712; when the war between the Jesuits and the Jansenists drawing towards a crisis, he fell a sacrifice to the prevalence of the former. Father le Tellier, the king's confessor, a furious agent of the Jesuits, infused into his master prejudices against Rollin, whose connections with cardinal de Noailles would alone have sufficed to have made him a Jansenist; and on this account he lost his share in the principality of Beauvais. No man, however, could have lost less in this than Rollin, who had every thing left him that was necessary to make him happy; retirement, books, and enough to live on. He now began to be employed upon Quinctilian; an author he justly valued, and saw neglected not without uneasiness. He retrenched in him whatever he thought rather curious than useful for the instruction of youth; he placed summaries or contents at the head of each chapter; and he accompanied the text with short select notes. His edition appeared in 1715, in 2 vols 12mo, with an elegant preface, setting forth his method and views.

In 1710, the university of Paris, willing to have a head suitable to the importance of their interests in the then critical conjuncture of affairs, chose Rollin again rector: but he was displaced in about two months by a letter de cachet. The university had presented to the parliament a petition, in which it protested against taking any part in the adjustment of the late disputes; and their being congratulated in a public oration by Rollin on this step, occasioned the letter which ordered them to choose a rector of more moderation. Whatever the university might suffer by the removal of Rollin, the public was probably a gainer; for he now applied himself to compose his treatise upon the Manner of Studying and Teaching the Belles Lettres, which was published, two volumes in 1726, and two more in 1728, 8vo.

This work has been justly esteemed for the sentiments of religion which animate its author, whose zeal for the public good prompted him to select the choicest passages of Greek and Latin authors. The style is sufficiently elegant, but the language on some occasions is not remarkable for delicacy; and in the book altogether there is neither much order nor depth. The author has indeed spoken of common things agreeably, and has spoken as an orator on subjects which demanded the investigation of the philosopher. One can scarcely reduce any thing in him to principles.—For example, the three species of eloquence; the simple, the temperate, and the sublime, can scarcely be understood from him when we read that the one resembles a frugal table; the second a beautiful ruin, with green wood growing

[illegible]; and the third thunder and an impetuous [illegible] which overflows every thing that oppoſes it.

The work, however, has been exceedingly ſucceſsful, and juſtly ſo; and its ſucceſs encouraged its author to undertake another work of equal uſe and entertainment; his *Hiſtoire Ancienne*, &c. or "Ancient Hiſtory of the Egyptians, Carthaginians, Aſſyrians, Babylonians, Medes and Perſians, Macedonians, and Greeks," which he finiſhed in 13 vols 8vo. and publiſhed between 1730 and 1738. M. Voltaire, after having obſerved that Rollin was "the firſt member of the univerſity of Paris who wrote French with dignity and correctneſs,' ſays of this work, that "though the laſt volumes, which were written in too great a hurry, are not equal to the firſt, it is nevertheleſs the beſt compilation that has yet appeared in any language; becauſe it is ſeldom that compilers are eloquent, and Rollin was remarkably ſo." This is perhaps ſaying too much. There are indeed in this work ſome paſſages very well handled; but they are only ſuch as he had taken from the ancient authors, in doing juſtice to whom he was always very happy. The reader will eaſily diſcover in this work the ſame attachment to religion, the ſame deſire for the public good, and the ſame love of virtue, which appears in that on the Belles Lettres. But it is to be lamented that his chronology is neither exact nor correſponding; that he ſtates facts inaccurately; that he has not ſufficiently examined the exaggerations of ancient hiſtorians; that he often interrupts the moſt ſolemn narrations with mere trifles; that his ſtyle is not uniform; and this want of uniformity ariſes from his borrowing from writers of a modern date 40 or 50 pages at a time. Nothing can be more noble and more refined than his reflections; but they are ſtrewed with too ſparing a hand, and want that lively and laconic turn on account of which the hiſtorians of antiquity are read with ſo much pleaſure. He tranſgreſſes the rule which he himſelf had eſtabliſhed in his Treatiſe on Studies. "The precepts which have a reſpect to manners (ſays he) ought, in order to make an impreſſion, to be ſhort and lively, and pointed like a dart. That is the moſt certain method of making them enter and remain on the mind." There is a viſible negligence in this diction with regard to grammatical cuſtom, and the choice of his expreſſions, which he does not chooſe at all times with ſufficient taſte, although, on the whole, he writes well, and has preſerved himſelf pure from many of the faults of modern authors. While the laſt volumes of his ancient hiſtory were printing, he publiſhed the firſt of his Roman Hiſtory; which he lived to carry on, through the eighth and into part of the ninth, to the war againſt the Cimbri, about 70 years before the battle of Actium. Mr Crevier, the worthy diſciple of Rollin, continued the hiſtory to the battle of Actium, which cloſes the tenth volume; and has ſince completed the original plan of Rollin in 16 vols 12mo, which was to bring it down from the foundation of the city to the reign of Conſtantine the Great. This hiſtory had not ſo great ſucceſs as his Ancient Hiſtory had. Indeed it is rather a moral and hiſtorical diſcourſe than a formal hiſtory; for the author does little more than point out ſome more remarkable events, while he dwells with a ſort of prolixity on thoſe parts which furniſh him a free field for moralizing. It is alternately diffuſe and barren; and the greateſt advantage of the work is, that there are ſeveral paſſages from T. Livy tranſlated with great elegance into French. He alſo publiſhed A Latin Tranſlation of moſt of the Theological Writings relative to the diſputes of the Times in which he lived. Rollin was one of the moſt zealous adherents of deacon Pâris; and before the incloſure of the cemetery of St Medard, this diſtinguiſhed character might have been often ſeen praying at the foot of his tomb. This he confeſſes in his Letters. He publiſhed alſo Leſſer Pieces; containing different Letters, Latin Harangues, Diſcourſes, Complimentary Addreſſes, &c. Paris 1771, 2 vols. 12mo. A collection which might have been contained in one volume, by keeping in only the beſt pieces. It is notwithſtanding valuable for ſome good pieces which it contains, for the favourable opinion which it exhibits of ſolid probity, ſound reaſon, and the zeal of the author for the progreſs of virtue and the preſervation of taſte. The Latin of Rollin is very correct, and much after the Ciceronian ſtyle, and embelliſhed with moſt judicious thoughts and agreeable images. Full of the reading of the ancients, from which he brought quotations with as much propriety as plenty, he expreſſed himſelf with much ſpirit and excellence. His Latin poems deſerve the ſame eulogium. Rollio.

This excellent perſon died in 1741. He had been named by the king a member of the academy of inſcriptions and belles lettres in 1701; but as he had not then brought the college of Beauvais into repute, and found he had more buſineſs upon his hands than was conſiſtent with a decent attendance upon the functions of an academician, he begged the privileges of a veteran, which were honourably granted him. Nevertheleſs, he maintained his connections with the academy, attended their aſſemblies as often as he could, laid the plan of his ancient hiſtory before them, and demanded an academician for his cenſor. Rollin was a man of an admirable compoſition; very ingenious, conſummate in polite learning, of rigid morals, and eminently pious. He was rather too religious; his religion carrying him into the territories of ſuperſtition; and he wanted nothing but a mixture of the philoſophic in his nature to make him a very perfect character. Nothing could be more benign, more pacific, more ſweet, more moderate than Rollin's temper. He ſhowed, it muſt be owned, ſome zeal for the cauſe of Janſeniſm; but in all other reſpects he was exceedingly moderate. The celebrated poet Rouſſeau conceived ſuch a veneration for him, that he came out of baniſhment incognito to Paris, on purpoſe to viſit him and pay his reſpects to him. He looked upon his hiſtories, not only as the beſt models of the hiſtoric kind, but as a complete ſyſtem of politics and morals, and a moſt inſtructive ſchool for princes as well as ſubjects to learn all their duties in.

Inſtead of bluſhing at the lowneſs of his birth, Rollin on no occaſion heſitated to ſpeak of it. "It is from the Cyclops's ſhop (ſays he, in a Latin epigram to one of his friends, to whom he had ſent a ſmall ſword) that I have taken my flight towards Parnaſſus." He was not, however, without ſome ſhare of vanity, eſpecially at hearing mention made of his writings, of which the well-timed praiſes of his adherents had given him a very high opinion. He ſpoke without any diſſimulation what he thought; and his opinions were leſs the effect of preſumption than of openneſs of heart. He was one of thoſe men who are vain without any mixture of pride.

Rolling, Rollo.

pride. Rollin ſpoke pretty well; but he had a greater readineſs of writing than ſpeaking; and much more ſatisfaction might be derived from his works than from his converſation. His name became famous throughout Europe; ſeveral princes ſought the honour of his friendſhip. The duke of Cumberland and the prince-royal of Pruſſia (afterwards king) were among the liſt of his admirers. This monarch honoured him with ſeveral letters; in one of which he pays him the following compliment, "Men of your character are fit companions for kings." As to the literary merit of this author, it was, we ſuſpect, too much extolled in his own time, and has been too much undervalued in ours.

ROLLING, the motion by which a ſhip rocks from ſide to ſide like a cradle, occaſioned by the agitation of the waves.

Rolling, therefore, is a ſort of revolution about an imaginary axis paſſing through the centre of gravity of a ſhip: ſo that the nearer the centre of gravity is to the keel, the more violent will be the rolling motion; becauſe the centre about which the vibrations are made is placed ſo low in the bottom, that the reſiſtance made by the keel to the volume of water which it diſplaces in rolling, bears very little proportion to the force of the vibration above the centre of gravity, the radius of which extends as high as the maſt-heads.

But if the centre of gravity is placed higher above the keel, the radius of vibration will not only be diminiſhed, but an additional force to oppoſe the motion of rolling will be communicated to that part of the ſhip's bottom which is below the centre of gravity.

So far as relates to the effect of rolling, when produced by the quality or ſtowage of the ballaſt, and to the manner by which it may be prevented, viz. a change of the quantity or diſpoſition of the ballaſt, we ſhall endeavour to explain under the article TRIM. It may, however, be neceſſary to remark, that the conſtruction of the ſhip's bottom may alſo contribute to diminiſh this movement conſiderably.

Many fatal diſaſters have happened to ſhips ariſing from a violent rolling; as the loſs of the maſts, looſening of the cannon, and ſtraining violently on the decks and ſides, ſo as to weaken the ſhip to a great degree. See PITCHING.

ROLLING-Preſs. See *Rolling* PRESS.

ROLLING-Tackle, a pulley or purchaſe faſtened to that part of a ſail-yard which is to the windward of the maſt, in order to confine the yard cloſe down to the leeward when the ſail is furled.

It is uſed to prevent the yard from having a great friction againſt the maſt in a high ſea, which would be equally pernicious to both.

ROLLO, the conqueror of Normandy, was a Norwegian duke, baniſhed from his country by Harold Harfagre, who conquered Norway in 870, on account of the piracies he exerciſed. He firſt retired with his fleet among the iſlands of the Hebrides to the north-weſt of Scotland, whither the flower of the Norwegian nobility had fled for refuge ever ſince Harold had become maſter of the whole kingdom. He was there received with open arms by thoſe warriors, who, eager for conqueſt and revenge, waited only for a chief to undertake ſome glorious enterpriſe. Rollo ſetting himſelf at their head, and ſeeing his power formidable, ſailed towards England, which had been long as it were a field open on all ſides to the violence of the northern nations. But the great Alfred had ſome years before eſtabliſhed ſuch order in his part of the iſland, that Rollo, after ſeveral fruitleſs attempts, deſpaired of forming there ſuch a ſettlement as ſhould make him amends for the loſs of his own country. He pretended, therefore to have had a ſupernatural dream, which promiſed him a glorious fortune in France, and which ſerved at leaſt to ſupport the ardour of his followers. The weakneſs of the government in that kingdom, and the confuſion in which it was involved, were ſtill more perſuaſive reaſons to inſure them of ſucceſs. Having therefore ſailed up the Seine to Rouen, he immediately took that capital of the province, then called *Neuſtria*, and making it his magazine of arms, he advanced up to Paris, to which he laid ſiege in form. This war at length ended in the entire ceſſion of Neuſtria, which Charles the Simple was obliged to give up to Rollo and his Normans in order to purchaſe a peace. Rollo received it in perpetuity to himſelf and his poſterity, as a feudal duchy dependent on the crown of France. A deſcription of the interview between Charles and this new duke gives us a curious picture of the manners of theſe Normans (as they were called by foreigners); for the latter would not take the oath of fealty to his ſovereign lord any other way than by placing his hands within thoſe of the king; and abſolutely refuſed to kiſs his feet, as cuſtom then required. It was with great difficulty he was prevailed on to let one of his warriors perform this ceremony in his ſtead; but the officer to whom Rollo deputed this ſervice, ſuddenly raiſed the king's foot ſo high, that he overturned him on his back; a piece of rudeneſs which was only laughed at: to ſuch a degree were the Normans feared, and Charles deſpiſed.

Rollo || Romance.

Soon after, Rollo was perſuaded to embrace Chriſtianity, and he was baptized with much ceremony by the archbiſhop of Rouen in the cathedral of that city. As ſoon as he ſaw himſelf in full poſſeſſion of Normandy, he exhibited ſuch virtues as rendered the province happy, and deſerved to make his former outrages forgotten. Religious, wiſe, and liberal, this captain of pirates became, after Alfred, the greateſt and moſt humane prince of his time.

ROMAN, in general, ſomething belonging to the city of Rome. See ROME.

KING OF THE ROMANS, in modern hiſtory is a prince elected to be ſucceſſor to the reigning emperor of Germany.

ROMANCE in matters of literature, a fabulous relation of certain adventures deſigned for the entertainment and inſtruction of the readers, and differing from the *novel* as it always exhibits actions great, dangerous, and generally extravagant. Many authors of the firſt name have written on the ancient *Romance*. It has exerciſed the pen of Hurd, of Warburton, and of ſome ladies, who have not thought it any derogation to the ſenſibility of their ſex to unite antiquarian reſearch with the cultivation of the *belles lettres*. We have not, however, ſeen any where ſo conciſe, juſt, and elegant an account of the origin and progreſs of *romances* as in D'Iſraeli's Curioſities of Literature. "Romance (ſays this writer) has been elegantly defined the offſpring of fiction and love. Men of learning have amuſed themſelves with tracing the epocha of romances. In this

research they have displayed more ingenuity than judgement; and some have fancied that it may have existed as far back as the time of Aristotle; Dearchus, one of his disciples, having written several works of this amusing species.

"Let us, however, be satisfied in deriving it from the Theagenes and Chariclea of Heliodorus, a bishop who lived in the 4th century, and whose work has been lately translated. This elegant prelate was the Grecian Fenelon (A). Beautiful as these compositions are when the imagination of the writer is sufficiently stored with accurate observations on human nature, in their birth, like many of the fine arts, they found in the zealots of religion men who opposed their progress. However Heliodorus may have delighted those who were not insensible to the felicities of a fine imagination, and to the enchanting elegancies of style, he raised himself, among his brother ecclesiastics, enemies; who at length so far prevailed, that it was declared by a synod, that his performance was dangerous to young persons, and that if the author did not suppress it, he must resign his bishoprick. We are told he preferred his romance to his bishopric. Even so late as in Racine's time, it was held a crime to peruse these unhallowed pages. He informs us, that the first effusions of his muse were a consequence of studying that ancient romance, which his master observing him to devour with the keenness of a famished man, he snatched it from his hands and flung it in the fire; a second copy experienced the same fate. What could Racine do? He bought a third, and took the precaution of devouring it secretly till he got it by heart; after which he offered it to his master with a smile to burn, if he chose, like the others.

The decision of these bigots was founded in their opinion of the immorality of such works. They alleged, that the writers paint too warmly to the imagination, address themselves too forcibly to the passions; and in general, by the freedom of their representations, hover on the borders of indecency. This censure is certainly well-founded. Many of the old romances, and even of the dramas, acted in Europe two centuries ago, are such as common prostitutes would in this age think indecent. But we are at present concerned with the origin of romance.

"The learned Fleury thinks that they were not known till the 12th century, and gives as their original the history of the dukes of Normandy. Verdier, whose opinion is of no great weight, says the invention of romance was owing to the Normans of France; and that these fictions being originally written in the old Norman language, they were entitled *Normances*; the name was afterwards altered to that of *Romances*. The Spaniards, who borrowed them from the French, called them *Romances*, which also did the Italians.

"Dom Rivet, one of the learned associates of the congregation of St Maur, authors of the Literary History of France, fixes their origin in the 10th century. He says, that the most ancient romance known was one which appeared in the middle of that century, under the title of *Philomena*, or *the Beloved*. This romance contains the pretended exploits of Charlemagne before Narbonne. At Toulouse, he tells us, they have preserved a copy of the Philomena in its original language; that is to say, the Romaunt or polished; such as was then spoken at court. They preferred this language to the Latin, which was then that of the common people, but vitiated with their corruptions. Romance.

"So far have we travelled on the road of conjecture: we shall now turn into the path of fact. It is certain that these compositions derive their name from the language in which they were first written. Abbé Iraild has given us the character of the earliest romances, which we shall transcribe; for to add to what is well expressed, however it may please the vanity of a writer, seldom tends to the gratification of the reader.

'The first romances were a monstrous assemblage of histories, in which truth and fiction were equally blended, but all without probability; a composition of amorous adventures, and all the extravagant ideas of chivalry. The incidents are infinitely multiplied; destitute of connection, of order, and art. These are the ancient and miserable romances which Cervantes, in his celebrated satirical romance of Don Quixote, has covered with an eternal ridicule.'

"It is, however, from these productions rather in their improved state, that poets of all nations have drawn their richest inventions. The agreeable wildness of that fancy which characterised the eastern nations was caught by the crusaders. When they returned home, they mingled in their own the customs of each country. The Saracens, who were men like themselves, because they were of another religion, and were therefore their enemies, were pictured under the tremendous form of *Paynim Giants*. The credulous reader of that day followed with trembling anxiety the *Red-cross Knight*. It was thus that fiction embellished religion, and religion invigorated fiction. Such incidents have enlivened the cantos of Ariosto, and adorned the epic of Tasso. Spenser is the child of their creation; and it is certain that we are indebted to them for some of the bold and strong touches of Milton."

Other circumstances however have been assigned as the sources of these extravagant fictions. "Castles were erected to repulse the vagrant attacks of the Normans; and in France (from the year 768 to 987) these places became fatal to the public repose. The petty despots who raised these castles, pillaged whoever passed, and carried off the females who pleased them. Rapine, of every kind, was the privilege of Lords! Mezeray observes, that it is from these circumstances romances have

(A) An ingenious and learned friend inquires, 'Is not the romance of the Golden Ass, by Apuleius, to be considered as an earlier specimen than that of Heliodorus?' To this our author has no objection; but he would not warrant *any* romance to be the *first* that ever was written. It is thus that some writers, more learned than sagacious, have discovered the first inventor of epistolary correspondence. A lady receives this honour: such learning is desperate! From the Asiatic Researches and other publications on Oriental literature, we are led to believe, that the native country of romance is the east; where it seems to have flourished in all its extravagant grandeur from time immemorial.

Romance. have invented their tales of knights-errant, monſters, and giants.

" De Saint Foix, in his Hiſtorical Eſſays on this ſubject, thus expreſſes himſelf: ' Women and girls were not in greater ſecurity when they paſſed by abbeys. The monks ſuſtained an aſſault rather than relinquiſh their prey: if they ſaw themſelves loſing ground, they brought to their walls the relics of ſome ſaint. Then it generally happened that the aſſailants, ſeized with awful veneration, retired, and dared not to purſue their vengeance. This is the origin of the enchanters, of the enchantments, and of the enchanted caſtles, deſcribed in romances.'

" To theſe may be added what the author of Northern Antiquities. Vol. I. p. 243, writes, that ' as the walls of the caſtles ran winding round them, they often called them by a name which ſignified *ſerpents* or *dragons*; and in theſe were commonly ſecured the women and young maids of diſtinction, who were ſeldom ſafe at a time when ſo many bold warriors were rambling up and down in ſearch of adventures. It was this cuſtom which gave occaſion to ancient romancers, who knew not how to deſcribe any thing ſimply, to invent ſo many fables concerning princeſſes of great beauty, guarded by dragons.'

" The Italian romances of the 14th century were ſpread abroad in great numbers. They formed the polite literature of the day. But if it is not permitted to authors freely to expreſs their ideas, and give full play to the imagination, theſe works muſt never be placed in the ſtudy of the rigid moraliſt. They indeed puſhed their indelicacy to the verge of groſſneſs, and ſeemed rather to ſeek than to avoid ſcenes which a modern would bluſh to deſcribe. They (to employ the expreſſion of one of their authors) were not aſhamed to name what God had created. Cinthia, Bandello, and others, but chiefly Boccacio, rendered libertiniſm agreeable, by the faſcinating charms of a poliſhed ſtyle, and a luxuriant imagination.

" This however muſt not be admitted as an apology for immoral works; for poiſon is ſtill poiſon, even when it is delicious. Such works were, and ſtill continue to be, the favourites of a nation which is ſtigmatiſed for being prone to illicit pleaſures and impure amours. They are ſtill curious in their editions, and are not parſimonious in their price for what they call an uncaſtrated copy. There are many Italians, not literary men, who are in poſſeſſion of an ample library of theſe old noveliſts.

" If we paſs over the moral irregularities of theſe romances, we may diſcover a rich vein of invention, which only requires to be releaſed from that rubbiſh which diſfigures it to become of an invaluable price. The Decamerons, the Hecatommiti, and the Novellas of theſe writers, made no inconſiderable figure in the little library of our Shakeſpeare. Chaucer is a notorious imitator and lover of them; his Knight's Tale is little more than a paraphraſe of Boccacio's Teſeoide. Fontaine has caught all their charms with all their licentiouſneſs. From ſuch works, theſe great poets, and many of their contemporaries, frequently borrowed their plots; not uncommonly kindled at their flame the ardour of their genius; but bending too ſubmiſſively to their own peculiar taſte, or that of their age, in extracting the ore, they have not purified it of the alloy.

" We muſt now turn our contemplation to the French romances of the laſt century. They were then carried to a point of perfection, which as romances they cannot exceed. To this the Aſtrea of D'Urſé greatly contributed. It was followed by the illuſtrious Baſſa, the great Cyrus, Clelia, &c. which, though not adapted to the preſent age, gave celebrity to their authors. Their ſtyle, as well as that of the Aſtrea, is diffuſe and inſipid. Zaide (attributed by ſome to Segrais, but by Huet to Madame La Fayette) and the princeſs of Cleves are tranſlated, and though they are maſterpieces of the kind, were never popular in our country, and are little adapted to its genius. Romance || Romania.

" It is not ſurpriſing that romances have been regarded as pernicious to good ſenſe, morals, taſte, and literature. It was in this light that they were conſidered by Boileau; becauſe a few had ſucceeded, a croud imitated their examples. Gomberville and Scudery, and a few more were admired; but the ſatiriſt diſſolved the illuſion. This he did moſt effectually by a dialogue, in which he ridicules thoſe citizens of a certain diſtrict, whoſe characters were concealed in theſe romances, under the names of Brutus, Horace Cocles, Lucretius, and Clelia. This dialogue he only read to his friends, and did not give it for a long time to the public, as he eſteemed mademoiſelle de Scudery: but when at length it was publiſhed, it united all the romance writers againſt our ſatiriſt.

" From romances, which had now exhauſted the patience of the public, ſprung novels. They attempted to allure attention by this inviting title, and reducing their works from ten to two volumes. The name of romance diſguſted; and they ſubſtituted thoſe of hiſtories, lives, memoirs, and adventures. In theſe works (obſerves Irail) they quitted the unnatural incidents, the heroic projects, the complicated and endleſs intrigues, and the exertion of noble paſſions; heroes were not now taken from the throne, they were ſought for even amongſt the loweſt ranks of the people. On this ſubject, I ſhall juſt obſerve, that a novel is a very dangerous poiſon in the hand of a libertine; it may be a ſalutary medicine in that of a virtuous writer." See Novel.

ROMAGNA, a province of Italy, in the pope's territories, bounded on the north by the Ferrareſe, on the ſouth by Tuſcany and the duchy of Urbino, on the eaſt by the Gulf of Venice, and on the weſt by the Bologneſe and a part of Tuſcany. It is fertile in corn, wine, oil, fine fruits, and paſtures. It has alſo mines, mineral waters, and ſalt-works, which make its principal revenue. Ravenna is the capital town.

ROMANIA, a province of Turkey in Europe, bounded on the north by Bulgaria, on the eaſt by the Black Sea, on the ſouth by the Archipelago and the ſea of Marmora, and on the weſt by Macedonia and Bulgaria; being 200 miles in length and 150 in breadth. It was formerly called *Thrace*, and is the principal and largeſt of all the provinces the Turks poſſeſs in Europe. It is a fruitful country in corn and paſtures, and there are mines of ſilver, lead, and alum. It is divided into three great governments or ſangiacates; namely, Kirkel, of which Philipoli is the capital; Gallipoli, whoſe capital is of the ſame name; and Byzantium, or Byzia, or Viza, of which Conſtantinople is the capital. The Turks beſtow the

name

... Romulia on all the territories they poſſeſs in ...

ROMANO (Giulio), a famous painter, was the ſcholar of Raphael, who had ſuch an affection for him, that he appointed him, with John Francis, Penni, his heir. His conceptions were more extraordinary and more elevated than even thoſe of his maſter, but not ſo natural. He was wonderful in the choice of attitudes; but did not perfectly underſtand the lights and ſhades, and is frequently harſh and ungraceful. The folds of his draperies, ſays Du Freſnoy, are neither beautiful nor great, eaſy nor natural, but all extravagant, like the fantaſtical habits of comedians. He was, however, ſuperior to moſt painters, by his profound knowledge of antiquity; and, by converſing with the works of the moſt excellent poets, particularly Homer, he made himſelf maſter of the qualifications neceſſarily required in a great deſigner. Julio Romano was alſo well ſkilled in architecture. He was employed by cardinal de Medicis, who was afterwards pope under the name of *Clement* VII.; and afterwards went to Mantua, whither he was invited by Frederic Gonzaga, marquis of that city, in order to avoid his being juſtly puniſhed for his having drawn at Rome the deſigns of 20 obſcene plates, engraved by Mark Antony, to which Aretine added the ſame number of ſonnets. Julio Romano embelliſhed the city of Mantua with many of his performances both in painting and architecture; and died in that city in 1545, at 54 years of age, much regretted by the marquis, who had an extraordinary friendſhip for him.

ROME, a very ancient and celebrated city of Italy, ſituated on the river Tiber, in E. Long. 13°. N. Lat. 41. 45. once the capital of the greateſt empire in the world; and famous in modern hiſtory for being the centre of an eccleſiaſtical tyranny, by which for many ages the greateſt part of the world was held in ſubjection.

1 Romans deſcended from Æneas.

The ancient Romans derived their origin from Æneas the Trojan hero: and though ſome hiſtorians pretend to treat his voyage into Italy as a mere fable, yet no ſufficient reaſons for rejecting this account have been offered, nor has any more probable hiſtory of the origin of the Roman name been given; ſo that, without entering into the diſpute, we ſhall proceed to the hiſtory of Æneas and his ſucceſſors as they are recorded by the generality of Latin writers.

When the Greeks, by the treachery of the ſons of Antenor, or by whatever other means it happened, were become maſters of Troy, Æneas with the forces under his command retired into the fortreſs of the city, and defended it bravely for ſome time; but yielding at length to neceſſity, he conveyed away his gods, his father, wife, and children, with every thing he had that was valuable, and, followed by a numerous crowd of Trojans, fled to the ſtrong places of Mount Ida. Hither all thoſe of his countrymen, who were more anxious than the reſt to preſerve their liberty, flocked to him from the ſeveral towns of Troas. His army thus augmented and advantageouſly poſted, he continued quiet, waiting for the departure of the Greeks, who, it was imagined, would return home as ſoon as they had pillaged the country. But theſe, after they had enriched themſelves with the ſpoils of Troy and of the neighbouring towns, turned their arms againſt the fugitives, reſolving to attack them in their ſtrong-holds upon the mountain. Æneas, to avoid the hazard of being forced in his laſt refuge, had recourſe to negociation; and, by his heralds, intreated the enemy not to conſtrain him to a battle. Peace was granted him, on condition that he with his followers quitted the Trojan territories; and the Greeks, on their part, promiſed not to moleſt him in his retreat, but to let him ſafely paſs through any country within the extent of their domination.

2 Æneas ſails from Troy to mount Ida.

Rome.

3 Makes peace with the Greeks and leaves it.

Upon this aſſurance Æneas equipped a fleet, in order to ſeek a ſettlement in ſome foreign land. We are told, that at his departure he left his eldeſt ſon Aſcanius with the Daſylites, a people of Bithynia, who deſired to have him for their king; but that the young prince did not remain long with them: for when Scamandrius (Aſtyanax), with the reſt of the Hectoridæ whom Neoptolemus permitted to return home from Greece, repaired to him, he put himſelf at their head, and led them back to their native country.

The Trojan having croſſed the Helleſpont, arrived in the peninſula of Pallene, where he built a city, called from him *Ænea*, and left in it a part of that multitude which had followed him. From thence he ſailed to Delos: and thence to Cythera, where he erected a temple to Venus. He built another to the ſame goddeſs in Zacynthus, in which iſland he likewiſe inſtituted games, called the *races of Æneas and Venus*: the ſtatues of both, ſays Dionyſius, are ſtanding to this day. In Leucas, where the Trojans landed, was to be ſeen, in the ſame author's time, a temple erected to Venus the mother of Æneas. Nor were Actium and Ambracia without monuments that teſtified his arrival in thoſe places. At Dodona were found brazen vaſes, upon which the name of the Trojan hero, who had made an offering of them to Jupiter, was engraven in old characters. Not far from Buthrotos, in Epirus, a Trojan camp which had eſcaped the injuries of time, retained the name of *Troja*. All theſe antiquities, ſtill ſubſiſting in the reign of Auguſtus, were then looked upon as indiſputable proofs of Æneas's voyage to Epirus: "and that he came into Italy (adds the ſame Dionyſius) we have the concurrent teſtimony of all the Romans; the ceremonies they obſerve in their ſacrifices and feſtivals bear witneſs to it, as alſo the Sibylline books, the Pythian oracles, and many other things which nobody can reaſonably reject as invented merely for ornament."

The firſt land of Italy which Æneas made, after croſſing the Ionian ſea, was cape Minerva, in Iapygia; and here he went on ſhore. Sailing afterwards from hence, and coaſting along the ſouth-eaſt of Italy and the eaſt and ſouth ſides of Sicily, he arrived with his fleet either by choice or by ſtreſs of weather at the port of Drepanum in that iſland. Elymus and Ægeſtus, who had eſcaped from Troy a little before him, had brought a Trojan colony to this place. Æneas augmented it by a good number of his followers, whom, pleaſed to have found a ſafe reſting place after many dangers and fatiguing voyages, he willingly left behind him at their requeſt; though certain authors pretend that he was conſtrained to it by the difficulty of tranſporting them, becauſe ſome Trojan women, weary of the ſea, had burnt a conſiderable part of his ſhips.

Æneas, leaving Drepanum, ſteered his courſe for Italy

Rome.

Italy across the Tyrrhenian sea. To the cape where he first landed, he gave name *Palinurus*, from one of his pilots who died there. The little island of Leucasia, not far distant, whither he sailed next, got its name in like manner from a daughter of Æneas's sister, who there ended her days. The port of Misenum, the island of Prochyta, and the promontory of Cajeta where he successively arrived were so called from being the burial places, the first of a noble Trojan his companion, the second of his kinswoman, and the third of his nurse. At length the Trojan prince and his chosen band finished their tedious and painful voyages on the coast of the since famous Latium. This was a small territory on the east side of the river Tiber, containing a part of the present *Campagna di Roma*: Latinus was the king of it; his capital town, Laurentum; his subjects, a people who, till his time called *Aborigines*, had from him taken the name of *Latins*. Here, far removed from their implacable enemies the Greeks, Æneas and his followers undertook to raise a second Troy: they fortified a camp near the mouth of the Tiber, gave it the name of *Troy*, and flattered themselves with the hopes of a quiet settlment, and a period to all their unhappy adventures.

4 Lands in Italy.

When Æneas arrived in Italy, Latinus was engaged in a war with the Rutuli, a neighbouring people, in which he was attended but with very indifferent success, when news was brought him that a foreign army had made a descent on his coasts, pillaged the maritime part of his dominions, and were fortifying themselves in a camp at a small distance from the sea. Hereupon he marched against them with all his forces, hoping to oblige them to reimbark and abandon his dominions, without meeting with any great resistance from a band of vagabonds, as he supposed, or pirates, come only to seek for plunder: but finding them, as he drew near, well-armed, and regularly drawn up, he thought it advisable to forbear engaging troops that appeared so well disciplined; and, instead of venturing a battle, to desire a parley. In this conference Latinus understanding who they were, and being at the same time struck with terror, and touched with compassion for those brave but unfortunate men, entered into a treaty with them, and assigned them a tract of land for a settlement, on condition that they should employ their arms and exert their valour in defence of his dominions, and look upon the Rutuli as a common enemy. This condition Æneas readily accepted; and

5 Enters into an alliance with Latinus, and marries his daughter.

complied with his engagement so faithfully, that Latinus came at length to repose an entire confidence in the Trojan; and in proof of it gave him Lavinia, his daughter and only child, in marriage, securing to him by that means the succession to the throne of Latium. Æneas, to testify his gratitude to Latinus, and affection for Lavinia, gave her name to the camp she had pitched; and instead of Troy called it *Lavinium*. The Trojans followed the example of their leader; and by making alliances with Latin families, became, in a short time, one and the same people with the Latins.

In the mean time Turnus, the queen's nephew, who had been brought up in the palace under the eye of Latinus, and entertained hopes of marrying Lavinia and succeeding to the throne, seeing the princess bestowed on a stranger, and all his views defeated, went over to the Rutuli; and by stirring them up, brought on a battle between them and the Latins, in which both he and Latinus were killed. Thus Æneas, by the death of his father-in-law, and by that of a troublesome rival, come into the quiet possession of the kingdom of Latium, which he governed with great wisdom, and transmitted to his posterity.

Rome.

Æneas is said to have reigned three years; during which time he established the worship of the gods of his own country, and to the religion of the Latins added that of Troy. The two Palladiums, which had been the protectors of that city, became the tutelary deities of Lavinium, and, in after ages, of the whole Roman empire. The worship of Vesta was likewise introduced by Æneas; and virgins, from her called *Vestals*, were appointed to keep a fire continually burning in honour of that goddess. Jupiter, Venus, and many other deities who had been revered in Troy, became, in all likelihood, known to the Latins by means of Æneas; which gave occasion to the poets of representing him under the character of a pious hero.

While Æneas was thus employed, the Rutuli, ancient enemies of the Latin name, entering into an alliance with Mezentius king of the Tyrrhenians, took the field with a design to drive out those new-comers, of whose power they began to conceive no small jealousy. Æneas marched out against them at the head of his Trojans and Latins. Hereupon a battle ensued, which lasted till night; when Æneas being pushed to the banks of the Numicus, which ran close by Lavinium, and forced into that river, was there drowned. The Trojans concealed his body; and pretending that he had vanished away on a sudden, made him pass for a deity among his credulous subjects, who accordingly erected a temple to him under the title of *Jupiter Indiges*.

6 His death.

Upon the death of Æneas, his son Euryleon, called also *Ascanius* and *Iulus*, ascended the throne; but as the young king did not think it advisable to venture a battle in the very beginning of his reign, with a formidable enemy, who promised himself great success from the death of Æneas, he had the prudence to confine himself within the walls of Lavinium, and to try whether he could, by an honourable treaty, put an end to so dangerous a war. But the haughty Mezentius demanding of the Latins, as one of the conditions of a peace, that they should pay him yearly, by way of tribute, all the wine produced in the territory of Latium, Ascanius rejected the proposal with the utmost indignation; and having caused all the vines throughout his dominions to be consecrated to Jupiter, and by that means put it out of his power to comply with the enemy's request, he resolved to make a vigorous sally, and try whether he could, by force of arms, bring the insulting Tyrrhenian to more reasonable terms. The main body of the enemy's army was encamped at some distance from Lavinium; but Lausus, the son of Mezentius, with the flower of their youth under his command, lay entrenched at the very gates of the city. The Trojans, who had been long accustomed to make vigorous sallies, marching out in the night, attacked the post where Lausus commanded, forced his entrenchments, and obliged the troops he had with him to save themselves by flying to the main body of the army encamped on the plain; but the unexpected arrival and

7 Succeeded by his son Ascanius.

overthrow

Rome. 8 Who defeats the Rutuli.

overthrew of their advance-guard ſtruck them with ſuch terror, that, inſtead of ſtopping the flight of their companions, they fled with them, in great diſorder, to the neighbouring mountains. The Latins purſued them, and in the purſuit Lauſus was killed: whoſe death ſo diſcouraged Mezentius, that he immediately ſued for peace; which was granted him, upon condition, that for the future the Tiber ſhould be the boundary between the Latin and Etrurian territories.

9 His kindneſs to Lavinia and her ſon.

In the mean time Lavinia, who had been left with child by Æneas, entertaining a ſtrong jealouſy of the ambition of her ſon-in-law, retired to the woods, and was there peaceably delivered of a ſon, who, from his father, was named *Æneas*, and, from the place of his birth, had the ſurname of *Sylvius*: but as the queen's flight, who had diſappeared on a ſudden, raiſed ſuſpicions at Lavinium prejudical to the reputation of Aſcanius, he uſed all poſſible means to remove them, cauſed diligent ſearch to be made after Lavinia, calmed her fears, and prevailed upon her to return to the town with her ſon whom he ever after treated as a brother. Lavinium grew every day more populous; but as it was in reality the patrimony of Lavinia, and the inheritance of her ſon Sylvius, Aſcanius reſolved to reſign it to them, and build elſewhere another city for himſelf. This he made the place of his reſidence, and the capital of his new kingdom, calling it *Alba Longa*; *Alba*, from a white ſow, which we are told Æneas had found in the place where it was built; and *Longa*, to diſtinguiſh it from another town of the ſame name in the country of the Marſi; or rather, becauſe it extended, without having much breadth, the whole length of a lake near which it was built. It was 30 years after the building of Lavinium that Aſcanius fixed his abode at Alba; and there he died, after a reign of about 38 years, 12 of which he had reſided at his new ſettlement. He left a ſon called *Iulus*; ſo that between him and Sylvius lay the right of ſucceſſion to the Latin throne; the latter being the ſon, and the former the grandſon of Æneas.

10 Aſcanius founds Alba Longa.

The Latins not thinking it their intereſt to continue divided, as it were, into two ſtates, reſolved to unite Alba and Lavinium into one ſovereignty; and as Sylvius was born of Lavinia the daughter of Latinus, and had thereby an undoubted title to the kingdom of his grandfather, whereas the other was but the ſon of a ſtranger, the Latins beſtowed the crown on Sylvius; and, to make Iulus ſome amends, decreed to him the ſovereign power in affairs of religion; a power which thenceforth continued in his family. Sylvius was ſucceeded by 13 kings of the ſame race, who for near 400 years reigned at Alba: but we ſcarce know any thing of them beſides their names, and the years of their reſpective reigns. Æneas Sylvius died, after a reign of 29 years. His ſon, called alſo *Æneas Sylvius*, governed Latium 31 years. *Latinus Sylvius*, who ſucceeded him, ſwayed the ſceptre for the ſpace of 51 years—Alba reigned 39; Capetus, by Livy named *Atys*, 26; Capis, 28; and Capetus, 13. Tiberinus, who ſucceeded him, engaged in a war which proved fatal to him; for in a battle which was fought on the banks of the Albula, he was forced into that river and drowned. From him the river took the name of *Tiber*, which it has borne ever ſince. Agrippa ſucceeded Tiberinus after a reign of eight years; and left the throne, which he had held 41 years, to Alladius; who reigned 19, and was ſucceeded by Aventinus, who left his name to the hill Aventinus, where he was interred. Procas, who ſucceeded him, and reigned 23 years, was the father of Numitor and Amulius; and at his death bequeathed the throne to his elder ſon Numitor. But Amulius, who ſurpaſſed his brother in courage and underſtanding, drove him from the throne; and to ſecure it to himſelf, murdered Ægeſtus, Numitor's only ſon, and conſecrated his daughter Rhea Sylvia to the worſhip of Veſta, by which ſhe was obliged to perpetual virginity. But this precaution proved ineffectual; for as the Veſtal was going to a neighbouring ſpring to fetch water for the performance of a ſacrifice to Mars, ſhe was met and raviſhed by a man in a military habit, like that in which the god Mars is repreſented. Some authors think that this counterfeit Mars was a lover come thither by her appointment; others charge Amulius himſelf with uſing this violence to his niece, not ſo much to gratify his luſt, as to have a pretence to deſtroy her.—For ever after he cauſed her to be carefully watched, till ſhe was delivered of two ſons; and then exaggerating her crime in an aſſembly of the people, he prevailed upon them to ſentence her to death, and to condemn the fruit of her criminal amour to be thrown into the Tiber. The ſentence againſt Rhea was, according to ſome authors, changed by Amulius, at the requeſt of his daughter Antho, into perpetual confinement, but executed againſt the twins; who being laid in a wooden trough, and carried to the foot of Mount Palatine, were there turned adrift on the Tiber, which at that time overflowed its banks. But the wind and ſtream proved both ſo favourable, that at the fall of the water the two infants were left ſafe on the ſtrand, and were there happily found by Fauſtulus, the chief of the king's ſhepherds, and ſuckled by his wife Acca Laurentia, who for her diſorderly life was called *Lupa*; and this probably gave riſe to the fabulous miracle of their being nurſed by a wolf.

Rome.

13 Adventure of Rhea Sylvia.

14 Of Romulus and Remus.

As Fauſtulus was probably well acquainted with the birth of the twins, he took more than ordinary care of their education, and ſent them to Gabii to be inſtructed there in Greek literature. As they grew up, they appeared to have ſomething great in their mien and air which commanded reſpect; and the aſcendant which they aſſumed over the other ſhepherds made them dreaded in the foreſts, where they exerciſed a ſort of empire. A quarrel happening between the herdſmen of Amulius and thoſe of Numitor, the two brothers took the part of the former againſt the latter; and ſome blood being ſhed in the fray, the adverſe party, to be revenged on *Romulus* and *Remus* (for ſo the twins were called), on the feſtival of Lupercalia, ſurpriſed Remus, and carried him before Numitor, to be puniſhed according to his deſerts. But Numitor feeling himſelf touched in the priſoner's favour aſked him where he was born, and who were his parents. His anſwer immediately ſtruck Numitor with a lively remembrance of his two grandſons; their age, which was about 18 years, agreed with the time when the two infants were expoſed upon the Tiber; and there needed no more to change his anger into tenderneſs.

In the mean time Romulus, eager to reſcue his brother, and purſue thoſe who had carried him off, was preparing to be revenged on them; but Fauſtulus diſ-

11 Reſigns the kingdom.

12 Origin of the name Tiber.

ſuaded

Rome. suaded him from it; and on that occaſion, diſcloſing to him his birth, awakened in his breaſt ſentiments worthy of his extraction. He reſolved, at all adventures, to attempt the delivering of his mother and grandfather from oppreſſion. With this view he aſſembled the country people, over whom he had aſſumed a kind of ſovereignty, and engaged them to come to the city on an appointed day, and enter it by different gates, provided with arms, which they were to conceal. While Romulus was thus diſpoſing every thing for the execution of his deſign, Numitor made the ſame diſcovery to Remus concerning his parents, and the oppreſſions they groaned under; which ſo fired him, that he was ready to embark in any enterpriſe. But Numitor took care to moderate the tranſports of his grandſon, and only deſired him to acquaint his brother with what he had heard from him, and to ſend him to his houſe. Romulus ſoon came, and was followed by Fauſtulus, who took with him the trough or ſkiff in which the twins had been expoſed, to ſhow it to Numitor: but, as the ſhepherd betrayed an air of concern and earneſtneſs in his looks, he was ſtopped at the gate of the city, led before Amulius, and examined concerning his burden. It was eaſily known by its make and inſcription, which was ſtill legible; and therefore Fauſtulus owned what it was, and confeſſed that the twins were living; but, in order to gain time, pretended that they were feeding flocks in a remote deſert. In the mean time, the uſurper's death being reſolved on, Remus undertook to raiſe the city, and Romulus to inveſt the king's palace. The country people came at the time appointed, and formed themſelves into companies each conſiſting of 100 men. They had no other enſigns but bundles of hay hanging upon long poles, which the Latins at that time called *manipuli*; and hence came the name of *manipulares*, originally given to troops raiſed in the country. With this tumultuous army Romulus beſet the avenues of the palace, forced the guard, and having killed the tyrant, after he had reigned 42 years, reſtored his grandfather Numitor to the throne.

15 They reſolve to found a colony.

Affairs being thus ſettled at Alba, the two brothers, by the advice of Numitor, undertook the founding of a new colony. The king beſtowed on them thoſe lands near the Tiber where they had been brought up, ſupplied them with all manner of inſtruments for breaking up ground, with ſlaves, and beaſts of burden, and granted full liberty to his ſubjects to join them. Hereupon moſt of the Trojans of whom there ſtill remained 50 families in Auguſtus's time, choſe to follow the fortune of Romulus and Remus, as did alſo the inhabitants of Palantium and Saturnia, two ſmall towns. For the more ſpeedy carrying on of the work, it was thought proper to divide thoſe who were to be employed in the building of the city into two companies, one under the command of Romulus, the other of Remus; but this diviſion, which was deſigned purely with a view to the public welfare, and that the two parties might work by way of emulation, gave birth to two factions, and produced a jealouſy between the two brothers, which broke out when they came to chooſe a place for the building of their new city; for Remus was for the Aventine, and Romulus for the Palatine mount. Upon which, the matter being referred to their grandfather, he adviſed the contending parties to have recourſe to the gods, and to put an end to the diſpute by augury, to which he was himſelf greatly addicted. The day appointed for the ceremony being come, the brothers poſted themſelves each upon his hill; and it was agreed, that whoever ſhould ſee the firſt flight, or the greateſt number, of vultures, ſhould gain his cauſe. After the two rivals had waited ſome time for the appearance of a favourable omen, Romulus, before any had appeared, ſent to acquaint his brother that he had ſeen ſome vultures; but Remus, having actually ſeen ſix, while his brother's meſſengers were yet on their way, haſtened, on their arrival, to mount Palatine, to examine the truth of what they had told him. He had no ſooner got thither, than by an unexpected good fortune twelve vultures appeared to Romulus. Theſe he immediately ſhowed to his brother; and, tranſported with joy, deſired him to judge himſelf of the truth of what his meſſengers had told him. However, Remus diſcovered the deceit; and, being told that Romulus had not ſeen the twelve vultures till after he had ſeen ſix, he inſiſted on the time of his ſeeing them, and the other on the number of birds he had ſeen. This widened the breach between the two brothers; and, their parties being divided, while each man eſpouſed the cauſe of his leader, the diſpute grew ſo warm, that, from words they came at length to blows. The ſhepherd Fauſtulus, who was equally dear to both the brothers, endeavouring to part the combatants, was by an unknown hand laid dead on the ſpot. Some writers tell us, that Remus likewiſe loſt his life in the fray; but the greater number place his death later, and ſay that he was killed by one Fabius, for having, in deriſion, leaped over the wall of the new city: but Livy ſays, the more common report was, that Remus fell by the hand of his brother.

Rome.

16 Death of Remus.

17 Foundation of Rome.

Romulus, being now head of the colony, by having got the better of his brother's party in the late engagement, applied his thoughts wholly to the building of the city, which he propoſed to call after his own name. He choſe mount Palatine for its ſituation, and performed all thoſe ceremonies which the ſuperſtition of the Hetrurians had introduced. He firſt offered ſacrifices to the gods, and ordered all the people to do the ſame: and from that time decreed, that eagles ſhould be the auſpices of his new colony. After this, great fires were kindled before their tents, and all the people leaped through the flames to purify themſelves. When this ceremony was over, they dug a trench round the ſpot where the aſſemblies of the people were afterwards held, and threw into it the firſt-fruits of whatever they were allowed to make uſe of for food: every man of the colony was ordered to caſt into the ſame trench an handful of earth, brought either from his own or ſome neighbouring country. The trench they called *Mundus*, that is, *the world*, and made it the centre round which the city was to be built. Then Romulus, yoking an ox and a cow to a plough, the coulter whereof was braſs, marked out, by a deep furrow, the whole compaſs of the city. Theſe two animals, the ſymbols of marriage, by which cities are peopled, were afterwards ſlain upon the altar. All the people followed the plough, throwing inwards the clods of earth which the ploughſhare ſometimes turned outwards. Wherever a gate was to be made, the plough was lifted up, and carried; and hence came the Latin word, *porta*, "a gate," de-

Rome. rived from the verb *fertare*, "to carry." As mount Palatine ſtood by itſelf, the whole was incloſed within the line made by the plough, which formed almoſt the figure of a ſquare; whence, by Dionyſius Halicarnaſſenſis, it is called *Roma Quadrata*.

As to the exact year of the foundation of Rome, there is a great diſagreement among hiſtorians and chronologers. Fabius Pictor, the moſt ancient of all the Roman writers, places it in the end of the Seventh Olympiad; this is, according to the computation of Uſher, in the year of the world 3256, of the flood 1600, and 748 before the Chriſtian æra. The Romans, if we may ſo call them, began to build, as Plutarch and others inform us, on the 21ſt of April; which day was then conſecrated to Pales, goddeſs of the ſhepherds; whence the feſtival of Pales, and that of the foundation of the city, were afterwards jointly celebrated at Rome.

18 At firſt but a poor village.

When Rome had received the utmoſt perfection which its poor and rude founder could give it, it conſiſted of about 1000 houſes, or rather huts; and was properly ſpeaking a beggarly village, whereof the principal inhabitants followed the plough, being obliged to cultivate with their own hands the ungrateful ſoil of a barren country which they had ſhared among themſelves. Even the walls of Romulus's palace were made of ruſhes, and covered with thatch. As every one had choſen his ground to build upon, without any regard to the regularity and beauty of the whole, the ſtreets, if we may ſo call them, were both crooked and narrow. In ſhort, Rome, till it was rebuilt after the burning of it by the Gauls, was rather a diſorderly heap of huts, than a city built with any regularity or order.

19 Romulus elected king.

As ſoon as the building of the city was finiſhed, Romulus aſſembled the people, and deſired them to chooſe what kind of government they would obey. At that time monarchy was the unanimous voice of the Romans, and Romulus was elected king. Before he aſcended the throne, however, he conſulted the will of the gods by augury; and having received a favourable anſwer, it thence became an eſtabliſhed cuſtom to have recourſe to augury before the raiſing any one to the dignity of king, prieſt, or any public employment. After this he applied himſelf to the eſtabliſhment of good order and ſubordination among his ſubjects. He put on a habit of diſtinction for himſelf, appointed 12 lictors to attend him as guards, divided his ſubjects, who at this time conſiſted only of 33,000 men, into *curiæ*, *decuriæ*, *patricians*, *plebeians*, *patrons*, *clients*, &c. for an account of which, ſee theſe articles as they occur in the order of the alphabet. After this he formed a ſenate conſiſting of 100 perſons, choſen from among the patricians; and a guard of 300 young men called *celeres*, who attended the king, and fought either on foot or on horſeback as occaſion required. The king's office at home was to take care of religious affairs, to be the guardian of laws and cuſtoms; to decide the weightier cauſes between man and man, referring thoſe of ſmaller moment to the ſenate; to call together the ſenators, and aſſemble the people, firſt delivering his own opinion concerning the affair he propoſed, and then ratifying by his conſent what was agreed on by the majority. Abroad, and in the time of war, he was to command the army with abſolute authority, and to take care of the public money. The ſenate were not only to be judges in matters of ſmall importance, but to debate and reſolve upon ſuch public affairs as the king propoſed, and to determine them by a plurality of voices. The people were allowed to create magiſtrates, enact laws, and reſolve upon any war which the king propoſed; but in all theſe things the conſent of the ſenate was neceſſary. Rome.

Romulus next proceeded to ſettle the religious affairs of his people. Many of the Trojan and Phrygian deities were added to thoſe whom the Aborigines or Italian natives already worſhipped. He choſe prieſts, inſtituted feſtivals, and laid the foundation of a regular ſyſtem of religion; after which, as his colony was ſtill thinly peopled, he opened an aſylum for fugitive ſlaves, homicides, outlaws, and debtors. Theſe, however, he did not at firſt receive within the walls, but appointed for their habitation the hill Saturnius called afterwards *Capitolinus*, on which he erected a temple to a divinity of his own invention, whom he named the *Aſylean god*, under whoſe protection all criminals were to live ſecurely. But afterwards, when the city was enlarged, the aſylum was incloſed within the walls, and thoſe who dwelt in it included among the citizens of Rome.

20 Rape of the Sabine women.

When Romulus had thus ſettled every thing relating to his new colony, it was found that a ſupply of women was wanting to perpetuate its duration. This occaſioned ſome difficulty; for the neighbouring nations refuſed to give their daughters in marriage to ſuch a crew of vagabonds as had ſettled in Rome; wherefore Romulus at laſt reſolved on the following expedient. By the advice of his grandfather Numitor, and with the conſent of the ſenate, he proclaimed a ſolemn feaſt and public games in honour of the Equeſtrian Neptune called *Conſus*. This occaſioned a great concourſe of people, who flocked from the adjacent parts to behold theſe pompous ſhows, together with the new city. But, in the midſt of the ſolemnity, the Romans, ruſhing in with their ſwords drawn, ſeized all the young women, to the number of 683, for whom Romulus choſe huſbands. Among all thoſe who were thus ſeized, only one married woman, named *Herſilia*, was found; and Romulus is ſaid to have kept her for himſelf.

21 Occaſions war with the neighbouring nations.

This violence ſoon brought on a war with the neighbouring nations. Acron king of Cænina, a city on the confines of Latium, having entered into a league with the inhabitants of Cruſtuminum and Antemnæ, invaded the Roman territories. Romulus marched againſt them without delay, defeated the confederate army, killed their king in ſingle combat, decreed himſelf a triumph, and conſecrated the ſpoils of Acron to Jupiter Feretrius, under the name of *Opima Spolia*. The city of Cænina was razed to the ground, and the inhabitants tranſplanted to Rome, where they were admitted to the privileges of citizens. The king then marched with one legion (conſiſting at this time of 3000 foot and 300 horſe) againſt the Cruſtumini and Antemnates, both of whom he defeated in battle, and tranſplanted the inhabitants to Rome; which being incapable of holding ſuch a number, Romulus took in the hill Saturnius abovementioned, on the top of which he built a citadel, committing the care of it to a noble Roman named *Tarpeius*. The citadel was ſurrounded on all ſides with ramparts and towers, which equally commanded the city and country. From the foot of the hill Saturnius a wall was carried on quite to the Tiber, and a gate opened

22 Rome enlarged.

Rome. opened in it named *Carmentalis*, from Carmenta the mother of Evander, who either lived there, or had ſome chapel or altar erected to her.

Romulus had now become ſo formidable to his neighbours, and had ſo well eſtabliſhed his reputation for clemency, that ſeveral cities of Hetruria voluntarily ſubmitted to him. Cœlius, an Hetrurian general, led the troops under his command to Rome, and ſettled on an hill near the city, which from him took the name of *Mount Cœlius*. The Sabines, however, not in the leaſt diſmayed at this increaſe of the Roman forces, ſent a deputation to Romulus, demanding reſtitution of the young women who had been carried off; and, upon his refuſal, marched to Rome with an army of 25,000 foot and 1000 horſe, under the command of their king Titus Tatius. Romulus, having received ſupplies from Numitor and from Hetruria, likewiſe took the field, with 20,000 foot and 800 horſe, with whom he ſeized an advantageous poſt, and fortified himſelf ſo ſtrongly, that he could not be attacked. The Sabine monarch, perceiving the military ſkill of Romulus, began to be apprehenſive of the event; but was extricated out of his difficulties by the treachery of Tarpeia daughter to the governor of the citadel, who agreed to betray that important fortreſs to the enemy, on condition of being rewarded with the bracelets which the Sabines wore on their left arms. But when once they became maſters of this important place, they are ſaid to have cruſhed Tarpeia under the weight of their bucklers, pretending that thus they diſcharged their promiſe, as they wore their bucklers alſo on their left arms. The poſſeſſion of the citadel enabled the Sabines to carry on the war with more ſucceſs; but, at laſt, in a general engagement, they had the misfortune to be driven back into the citadel, whither they were purſued by the Romans, who expected to have retaken that important poſt; but the enemy, rolling down great ſtones from the top of the hill, wounded Romulus on the head, ſo that he was carried inſenſible out of the field of battle, while, in the mean time, his troops were repulſed, and purſued to the very gates of Rome. However, the king ſoon recovering himſelf, encouraged his routed troops, and drove the enemy back into the citadel. But while the two nations were thus fiercely contending, the women, for whoſe cauſe the war had been commenced, undertook the office of mediators; and having obtained leave from the ſenate, marched in a body to the camp of the Sabines, where they pleaded the cauſe of their huſbands ſo effectually, that a treaty of union between the two nations was ſet on foot, and a peace was at laſt concluded, on the following terms. 1. That the two kings ſhould reſide and reign jointly at Rome. 2. That the city ſhould ſtill, from Romulus, be called *Rome*; but the inhabitants *Quirites*, a name till then peculiar to the Sabines. 3. That the two nations ſhould become one; and that the Sabines ſhould be made free in Rome, and enjoy all the privileges of Roman citizens. As Rome was chiefly indebted for this increaſe of her power and ſplendor to the Sabine women, honourable privileges and marks of diſtinction were allowed them. Every one was commanded to give way to them; in capital cauſes they were exempted from the juriſdiction of the ordinary judges; and their children were allowed to wear a golden ball hanging from their necks, and a particular kind of robe called *prætexta*, to diſtinguiſh them from the vulgar. Rome.

The two kings reigned with great harmony for the ſpace of five years; during which time the only military exploit they accompliſhed was the reduction of the city of Cameria at a ſmall diſtance from Rome. Four thouſand of the Camerini were tranſplanted to Rome, and a Roman colony ſent to repeople Cameria; ſoon after which the Sabine king was murdered by the Lavinians, on account of his granting protection to ſome of his friends who had ravaged their territories. The Lavinians, fearing the reſentment of Romulus, delivered up the aſſaſſins into his hands; but he ſent them back unpuniſhed, which gave occaſion to ſuſpect that he was not diſpleaſed with the death of his colleague.

Soon after the death of Tatius, Rome was afflicted with famine and peſtilence, which encouraged the Camerini to revolt; but Romulus marching againſt them ſuddenly, defeated them with the loſs of 6000 men. After which he attacked the Fidenates, whoſe city ſtood about five miles from Rome, took their capital, and made it a Roman colony. This drew upon him the reſentment of the Veientes, a powerful nation in the neighbourhood, who claimed Fidenæ as within their juriſdiction; but their forces being defeated in two engagements, and a great number of them taken priſoners, they were obliged to ſue for peace. Romulus granted them a truce for 100 years, on condition that they delivered to him ſeven ſmall towns on the Tiber, together with ſome ſalt-pits near the mouth of that river, and ſent 50 of their chief citizens as hoſtages to Rome. The priſoners taken in this war were all ſold for ſlaves.

The remaining part of the life of Romulus was ſpent in making laws for the good of his people; but towards the latter end of his reign, being elated with ſucceſs, he began to enlarge the bounds formerly ſet to his prerogative, and to behave in an arbitrary manner. He paid no longer any regard to the voice of the ſenate, but aſſembled them only for form's ſake to ratify his commands. The ſenate therefore conſpired to deſtroy him, and accompliſhed their purpoſe while he was reviewing his troops. A violent ſtorm of hail and thunder diſperſed the army; and the ſenators taking this opportunity, when they were left alone with the king, inſtantly killed him, and conveyed his body out of ſight. Some writers tell us, that, the better to conceal the fact, they cut his body in pieces, each of them carrying away a part under his robe; after which they told the multitude, that their king was on a ſudden ſurrounded by flame, and ſnatched up into heaven. This ſtratagem, however, did not ſatisfy the ſoldiery, and violent diſturbances were about to enſue, when Julius Proculus, a ſenator of great diſtinction, having aſſembled the Curiæ, told them that Romulus had appeared to him, and enjoined him to acquaint the people that their king was returned to the gods from whom he originally came, but that he would continue to be propitious to them under the name of *Quirinus*; and to the truth of this ſtory Julius ſwore.

Romulus reigned, according to the common computation, 37 years: but ſome hiſtorians reduce the length of his reign to little more than 17; it being very unlikely, as they obſerve, that a prince of ſuch an active diſpoſition ſhould perform nothing worthy of

23 Invaſion of the Sabines.

24 The citadel beſieged.

25 Peace concluded, and the two nations united.

26 Tatius murdered.

27 And likewiſe Romulus.

Rome. record during a period of 20 years. Be this as it will, however, the death of Romulus was followed by an interregnum, during which the senators, to prevent anarchy and confusion, took the government into their own hands. Tatius added another hundred to that body: and these 200 senators divided themselves into decuries or tens. These decuries drew lots which should govern first; and the decury to whose lot it fell enjoyed the supreme authority for five days; yet in such a manner, that one person only of the governing decury had the ensigns of sovereignty at a time. To these another decury succeeded, each of them sitting on the throne in his turn, &c. But the people soon growing weary of such frequent change of masters, obliged the senate to resolve on the election of a king. The senate referred the election to the people, and the people to the senate, who at last undertook the task. Some difficulties, however, occurred: the Romans did not choose to be subject to a Sabine; and the Sabines, as they had been subject to Romulus after the death of Tatius, insisted that the king should be chosen out of their nation. At last it was agreed, that the king should be a Sabine, but that the Romans should make the choice.

28 His death followed by an interregnum.

29 Numa Pompilius the second king.

In consequence of this determination, the Romans elected Numa Pompilius, an austere philosopher, who had married Tatia, the daughter of Tatius the late king. After the death of his wife, he gave himself entirely up to philosophy and superstition, wandering from solitude to solitude, in search of sacred woods and fountains, which gave the people a great opinion of his sanctity. The philosopher at first rejected the offer of the kingdom; but being at last prevailed upon, he set out for Rome, where he was received with loud acclamations, and had his election unanimously confirmed by the senate.

The reign of Numa is by no means memorable for battles or conquests. He was averse to war; and made it his study to soften the manners of the Romans, rather than to exalt them to superiority over their neighbours. He dismissed the celeres, encouraged agriculture, and divided the citizens into distinct bodies of tradesmen. This last measure he took on purpose to abolish the distinction between Romans and Sabines, which had hitherto rent the city into two factions; and this effectually answered his end: for now all of each particular profession, whether Romans or Sabines, were obliged to associate together, and had each their respective courts and privileges. In this division the musicians held the first rank, because they were employed in the offices of religion. The goldsmiths, carpenters, curriers, dyers, taylors, &c. formed also distinct communities; and were allowed to make bye-laws among themselves, to have their own festivals, particular sacrifices, &c.

Though Numa himself is said by Plutarch to have had pretty just notions of the Supreme Being, he nevertheless added innumerable superstitions to those he found in Rome. He divided the ministers of religion into eight classes, appointing to each their office with the greatest precision; he erected a temple to Janus, the symbol of prudence, which was to remain open in time of war, and to be shut in time of peace. Another temple was erected to *Bona Fides*; and he invented a new kind of deities called *Dii Termini*, or boundaries, which he caused to be placed on the borders of the Roman state, and of each man's particular lands.—The last reformation which Numa undertook, was that of the kalendar. Romulus had divided his year into ten months, which, according to Plutarch, had no certain or equal number of days; some consisting of 20, some of 35, &c. However, by other historians, we are informed that he allotted to March, May, Quintilis, and October, 31 days; to April, June, Sextilis, November, and December 30; making in all 304 days. But Numa being better acquainted with the celestial motions, added to these the two months of January and February. To compose these two months he added 50 days to the 304; and thus made the year answer to the course of the moon. He then took six more from the months that had even days; and added one day merely out of superstition, that the year might prove fortunate; for the pagans looked upon even numbers as unlucky, but imagined odd numbers to be fortunate. However, he could make out no more than 28 for February, and therefore that month was always reckoned unlucky among the Romans. Besides this, he observed the difference between the solar and lunar year to be 11 days; and to remedy the inequality, he added an intercalary month named *Mercedinus* or *Mercedonius*, of 22 days every two years: but as he knew also that the solar year consisted of 365 days 6 hours, he ordered that every fourth year the month Mercedinus should consist of 23 days. The care of these intercalations was left to the priests, who left out or put in the intercalary day or month as they imagined it to be lucky or unlucky; and by that means created such confusion, that the festivals came in process of time to be kept at a season quite opposite to what they had been formerly.

Rome.

30 Succeeded by Tullus Hostilius.

These are all the remarkable transactions of the reign of Numa, which is said to have continued 43 years; though some think that its duration could not be above 15 or 16. His death was followed by a short interregnum; after which Tullus Hostilius, the son or grandson of the famous Hersilia, was unanimously chosen king. Being of a bold and fiery temper, he did not long continue to imitate his peaceful predecessor. The Albans, indeed, soon gave him an opportunity of exercising his martial disposition. Cœlius, or, as he is called by Livy, *Cluilius*, who was at the head of the Alban republic, jealous of the growing greatness of Rome, privately commissioned some of the most indigent of his subjects to waste the Roman territory; in consequence of which a Roman army entered the territories of Alba, engaged the robbers, killed many, and took a great number prisoners. A war soon commenced, in consequence of this, between the two nations; but when the armies came in sight of each other, their ardour cooled, neither of them seeming inclined to come to an engagement. This inaction raised a great discontent in the Alban army against Cluilius; insomuch that he came to a resolution of giving battle to the Romans next morning, or of storming their trenches if they should decline it. Next morning, however, he was found dead in his bed; after which the Albans chose in his stead one Mettus Fuffetius, a man remarkable for his hatred to the Roman name, as Cluilius had been before him. Fuffetius, however, continued in the same state

31 His war with the Albans.

Rome. ſtate of inactivity as his predeceſſor, until he received certain intelligence that the Veientes and Fidenates had reſolved to deſtroy both Romans and Albans when they ſhould be weakened by a battle. Fuffetius then reſolved to came to an accommodation with the Romans; and, having obtained a conference with Tullus, both ſeemed equally deſirous of avoiding the calamities of war. But, in order to eſtabliſh the peace on the moſt perfect foundation, Tullus propoſed that all, or at leaſt the chief families in Alba, ſhould remove to Rome; or, in caſe they were unwilling to leave their native city, that one common council ſhould be eſtabliſhed to govern both cities, under the direction of one of the two ſovereigns. Fuffetius took aſide thoſe who attended him, to conſult with them about this propoſal; but they, though willing to come to an accommodation with Rome, abſolutely refuſed to leave Alba. The only difficulty remaining, then, was to ſettle which city ſhould have the ſuperiority; and, as this could not be determined by argument, Tullus propoſed to determine it by ſingle combat betwixt himſelf and Fuffetius. This propoſal, however, the Alban general thought proper to decline; and it was at laſt agreed, that three champions ſhould be choſen out of each camp to decide the difference. This produced the famous combat between the Horatii and Curiatii, by which the ſovereignty was decided in favour of Rome. See HORATII.

Tullus now reſolved to call the Fidenates to an account for their treacherous behaviour during the war with Alba, and therefore cited them to appear before the ſenate; but they, conſcious of their guilt, refuſed to appear, and took up arms in conjunction with the Veientes. Fuffetius, in obedience to the orders of Tullus, joined him with the Alban troops; but the day before the battle, he acquainted the principal officers with his deſign, which was to ſtand neuter till fortune had declared for one ſide, and then to join with the conqueror. This deſign being approved, Fuffetius, during the engagement, retired with his forces to a neighbouring eminence. Tullus perceived his treachery; but diſſembling his uneaſineſs, told his men that Fuffetius had poſſeſſed himſelf of that hill by his order, and that he was from thence to ruſh down upon the enemy. The Veientes, in the mean time, who had expected that Fuffetius was to join them, were diſmayed, and the Romans obtained the victory. After the battle, Tullus returned privately to Rome in the night; and having conſulted with the ſenate about the treachery of Fuffetius, returned to the camp by break of day. He then detached Horatius, who had conquered the three Curiatii, with a choſen body of horſe and foot, to demoliſh Alba, as had been concerted at Rome. In the mean time, he commanded both the Roman and Alban troops to attend him unarmed, but gave private orders to the Romans to bring their ſwords concealed under their garments. When they were aſſembled, he laid open the treachery of Fuffetius, and ordered him to be torn in pieces by horſes. His accomplices were all put to the ſword; and the inhabitants of Alba carried to Rome, where they were admitted to the privileges of citizens, and ſome of them even admitted to the ſenate.

32 Alba demoliſhed, and the inhabitants tranſported to Rome.

Tullus now turned his arms againſt Fidenæ, which he again reduced under the Roman yoke; and took Medulia, a ſtrong city of the Latins; after which he waged a ſucceſsful war with the Sabines, whoſe union with the Romans ſeems to have ceaſed with the time of Numa. This was the laſt of his martial exploits; after which we hear no more of him, but that he became extremely ſuperſtitious in his advanced years, giving ear to many fooliſh ſtories, as that it rained ſtones, that miraculous voices were heard from heaven, &c. and for this he appointed nine days expiatory ſacrifices; whence it became a cuſtom to appoint nine days to appeaſe the wrath of the gods as often as men were alarmed with prodigies. As to the manner of his death authors are not agreed. Some tell us that he was killed by lightning, together with his wife, children, and his whole family; while others are of opinion that he was murdered with his wife and children by Ancus Martius who ſucceeded him. He died after a reign of 33 years, leaving the city greatly increaſed, but the dominions much the ſame as they had been in the time of Romulus.

33 Death of Tullus, who is ſucceeded by Ancus Martius.

After a ſhort interregnum, Ancus Martius, the grandſon of Numa by his daughter Pompilia, and Marcus his relation, was unanimouſly choſen by the people and ſenate. Though naturally inclined to war, he began his reign with attempting to reſtore the ceremonies of Numa, which had been neglected under Tullus Hoſtilius. He endeavoured alſo to draw the attention of his people to huſbandry and the peaceful arts; adviſing them to lay aſide all ſorts of violence, and to return to their former employments. This gained him the affections of his ſubjects, but brought upon him the contempt of the neighbouring nations. The Latins, pretending that their treaty with Rome was expired, made inroads into the Roman territories. Ancus, after uſing the ceremonies directed by Numa, took the field with an army conſiſting entirely of new levied troops, and reduced the cities of Politorium, Tillena, and Ficana, tranſplanting the inhabitants to Rome. A new colony of Latins repeopled Politorium; but Ancus retook the place next year, and entirely demoliſhed it. He then laid ſiege to Medulia; which, though it had been ruined by Tullus Hoſtilius, was now ſtronger than ever. It ſubmitted after a ſiege of four years, when Ancus found himſelf obliged to undertake a ſecond expedition againſt Ficana, which he had before reduced, as we have already related; and it was not without the utmoſt difficulty that he reduced it a ſecond time. After this he defeated the Latins in a pitched battle; vanquiſhed the Fidenates, Veientes, and Sabines; and having taken in the hill Janiculum to be included within the walls, and built the port of Oſtia, he died in the 24th year of his reign.

34 His warlike exploits and death.

Ancus Martius left two ſons behind him, one an infant, and the other about 15 years of age. Both of theſe he put under the tuition of Tarquin, the ſon of a rich merchant in Corinth, who had fled from that city to ſecure his wealth from Cypſelus tyrant of the place. He ſettled in Tarquinii, one of the principal cities in Hetruria; but finding that he could not there attain to any of the principal poſts in the city on account of his foreign extraction, he removed to Rome, where he had been gradually raiſed to the rank of patrician and ſenator. The death of Ancus Martius gave him an opportunity of aſſuming the regal dignity, and ſetting aſide his pupils; and in the beginning of his reign he took

35 His ſons ſupplanted by Tarquin I.

took care to ſtrengthen his party in the ſenate by adding another hundred to that body. Their were called [illegible], becauſe they were choſen out of the plebeians; however, they had the ſame authority in the ſenate as the others, and their children were called [illegible].

Tarquin was not inferior to any of his predeceſſors either in his inclination or abilities to carry on a war. As ſoon as he aſcended the throne, he recommenced hoſtilities with the Latins; from whom he took the cities of Apiolæ, Cruſtuminum, Nomentum, and Collatia. The inhabitants of Apiolæ were ſold for ſlaves; but thoſe of Cruſtuminum and Nomentum, who had ſubmitted after their revolt, were treated with great clemency. The inhabitants of Collatia were diſarmed, and obliged to pay a large ſum of money; the ſovereignty of it, in the mean time, being given to Egerius, the ſon of Arunx, Tarquin's brother; from whence he took the name of *Collatinus*, which he tranſmitted to his poſterity. Corniculum, another city of Latium, was taken by ſtorm, and reduced to aſhes. This progreſs having greatly alarmed the Latins, ſeveral of them joined their forces in order to oppoſe ſuch a formidable enemy; but being defeated in a bloody battle near Fidenæ, they were obliged to enter into an alliance with Rome; upon which the Latins having held a national conference, entered into a league with the Hetrurians, and again took the field with a very numerous army. But Tarquin, having defeated the confederate armies in two very bloody battles, obliged the Latin cities to ſubmit to a kind of dependence on Rome; and, having entered the city in triumph, built the circus maximus with the ſpoils which he had taken from the enemy.

The war with the Latins was ſcarce ended, when another commenced with Hetruria. This was accounted the moſt powerful nation in Italy, and was at that time divided into 12 tribes or lucomonies. Theſe appointed a national aſſembly, in which it was decreed that the whole force of Hetruria ſhould be employed againſt Tarquin; and if any city preſumed only to ſtand neuter, it ſhould be for ever cut off from the national alliance. Thus a great army was raiſed, with which they ravaged the Roman territory, and took Fidenæ by the treachery of ſome of its inhabitants. Tarquin, not being in a condition to oppoſe them at firſt, was obliged to ſubmit to the loſs occaſioned by their ravages for a whole year; after which he took the field with all the forces he could raiſe. The Roman army was divided into two bodies, one under the king himſelf, the other commanded by his nephew Collatinus. The latter, having divided his forces in order to plunder the country, was defeated; but Tarquin, in two engagements, vanquiſhed the army which oppoſed him. He then marched againſt Fidenæ, where he gained a third battle; after which he took the city. Such of the citizens as were ſuſpected to have been concerned in betraying it to the enemy were whipped to death; the reſt were ſent into baniſhment, and their lands divided by lot among the Roman ſoldiers. Tarquin now haſtened to oppoſe the new army of the Hetrurians before their forces could be properly collected; and having come up with them at Eretum, a place about 10 miles from Rome, defeated them with great ſlaughter, for which victory he was decreed a triumph by the ſenate; while the enemy, diſheartened by ſo many miſfortunes, were glad to ſue for peace; which Tarquin readily granted, upon the ſole condition of their owning his ſuperiority over them. In compliance with this, the Hetrurians ſent him all the enſigns of royalty which were in uſe among them, viz. a crown of gold, a throne of ivory, a ſceptre with an eagle on the top of it, a tunic embroidered with gold, and adorned with figures of palm-branches, together with a purple robe enriched with flowers of ſeveral colours. Tarquin, however, would not wear theſe magnificent ornaments till ſuch time as the ſenate and people had conſented to it by an expreſs law. He then applied the regalia to the decoration of his triumph, and never afterwards laid them aſide. In this triumph he appeared in a gilt chariot, drawn by four horſes, clothed in a purple robe, and a tunic embroidered with gold, a crown on his head, and a ſceptre in his hand, attended by 12 lictors with their axes and faſces.

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37 Enſigns of royalty ſent him by the Hetrurians.

Tarquin, having now obtained ſome reſpite from war, applied himſelf to the beautifying and ornamenting the city. He built the walls of Rome with hewn ſtone, and erected thoſe famous common ſewers which have deſervedly been accounted one of the wonders of the world. Rome at this time contained four hills within its compaſs, viz. the Palatinus, Tarpeius, Quirinalis, and Cœlius. In the valleys between theſe hills, the rain-water and ſprings uniting, formed great pools which laid under water the ſtreets and public places. The mud likewiſe made the way impaſſable, infected the air, and rendered the city unhealthy. Tarquin undertook to free the city from this nuiſance, by conveying off theſe waters by ſubterraneous channels into the Tiber. In doing this, it was neceſſary to cut thro' hills and rocks a channel large enough for a navigable ſtream, and covered with arches ſtrong enough to bear the weight of houſes, which were frequently built upon them, and ſtood as firm as on the moſt ſolid foundations. All theſe arches were made of hard ſtone, and neither trouble nor expence were ſpared to make the work durable. Their height and breadth were ſo conſiderable, that a cart loaded with hay could eaſily paſs through them under ground. The expence of conſtructing theſe ſewers was never ſo thoroughly underſtood as when it became neceſſary to repair them; for then the cenſors gave no leſs than 1000 talents to the perſon appointed for this purpoſe.

38 Builds the common ſewers, and ornaments the city.

Beſides theſe great works, Tarquin adorned the forum, ſurrounding it with galleries in which were ſhops for tradeſmen, and building temples in it for the youth of both ſexes, and halls for the adminiſtration of public juſtice. He next engaged in a war with the Sabines, on pretence that they had aſſiſted the Hetrurians. Both armies took the field, and came to an engagement on the confines of Sabinia, without any conſiderable advantage on either ſide; neither was any thing of conſequence done during the whole campaign. Tarquin then, conſidering with himſelf that the Roman forces were very deficient in cavalry, reſolved to add ſome new bodies of knights to thoſe already inſtituted by Romulus. But this project met with great oppoſition from the ſuperſtitious augurs, as the original diviſion of horſe into three bodies had been determined by auguries; and Actius Nævius, the chief of the

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the diviners at that time, violently oppoſed the king's will. On this Tarquin, deſirous to expoſe the deceit of theſe people, ſummoned Nævius before an aſſembly of the people, and deſired him to ſhow a ſpecimen of his art, by telling the king if what he thought of at that time could be done or not. The augur replied, after conſulting his birds, that the thing was very poſſible. On which Tarquin told him, that he had been thinking whether it was poſſible to cut a flint with a razor, pulling at the ſame time a razor and flint from below his robe. This ſet the people a-laughing; but Nævius gravely deſiring the king to try it, he was ſurpriſed to find that the flint yielded to the razor; and that with ſo much eaſe as to draw blood from his hand. The people teſtified their ſurpriſe by loud acclamations, and Tarquin himſelf continued to have a great veneration for augurs ever after. A ſtatue of braſs was erected to the memory of Nævius, which continued till the time of Auguſtus; the razor and flint were buried near it, under an altar, at which witneſſes were afterwards ſworn in civil cauſes.

39 Adventure of Nævius the augur.

This adventure, whatever was the truth of it, cauſed Tarquin to abandon his deſign of increaſing the number of bodies of horſe, and content himſelf with augmenting the number in each body. He then renewed the war with the Sabines, ravaged their country defeated them in three pitched battles, obliging them at laſt to ſubmit to him and put him in poſſeſſion of their country. In the decline of life he employed himſelf in further decorating the city, building temples, &c.

40 Aſſaſſinated by the ſons of Ancus Martius.

He was aſſaſſinated in his palace, in the 80th year of his age, by the ſons of Ancus Martius, whom he had originally deprived of the kingdom.

After the death of Tarquin I. his wife Tanaquil preſerved the kingdom to her ſon-in-law Servius Tullius, by artfully giving out that the king was only ſtunned, and would ſoon recover; upon which the ſons of Ancus went voluntarily into baniſhment. The ſecond day after his deceaſe, Servius Tullus heard cauſes from the throne in the royal robes and attended by the lictors; but as he pretended only to ſupply the king's place till he ſhould recover, and thought it incumbent on him to revenge the wicked attempt upon his life, he ſummoned the ſons of Ancus to appear before his tribunal; and on their non-appearance, cauſed them to be declared infamous, and their eſtates to be confiſcated.

41 Servius Tullus ſucceeds.

After he had thus managed matters for ſome time in ſuch a manner as to engage the affections of the people, the death of Tarquin was publiſhed as a thing that had newly happened, and Servius Tullius aſſumed the enſigns of royalty, having none to diſpute the honour with him.

The new king ſhowed himſelf every way worthy of the throne. No ſooner were the Hetrurians informed of Tarquin's death, than they ſhook off the yoke; but Servius quickly reduced them to obedience, depriving them of their lands, which he ſhared among the poor Roman citizens who had none. For this he was decreed a triumph by the people, in ſpite of the oppoſition of the ſenate, who could never be brought to approve of his election to the kingdom, though he was ſoon after legally choſen by the tribes.

After Servius had obtained the ſanction of the popular voice, he marched a ſecond time againſt the revolted Hetrurians; and having again vanquiſhed them, was decreed another triumph. He then applied himſelf to the enlarging and adorning the city. To the hills Palatinus, Tarpeius, Quirinalis, Cœlius, and Aventinus, he added the Eſquilinus and Viminalis, fixing his own palace on the Eſquilinus, in order to draw inhabitants thither. He likewiſe added a fourth tribe, which he called *Tribus Eſquilina*, to thoſe inſtituted by Romulus. He divided alſo the whole Roman territory into diſtinct tribes, commanding that there ſhould be at leaſt one place of refuge in each tribe, ſituated on a riſing ground, and ſtrong enough to ſecure the effects of the peaſants in caſe of a ſudden alarm. Theſe ſtrong-holds he called *pagi*, that is, "villages;" and commanded that each of them ſhould have their peculiar temple, tutelary god, and magiſtrates. Each of them had likewiſe their peculiar feſtival, called *paganalia*; when every perſon was to pay into the hands of thoſe who preſided at the ſacrifices a piece of money, the men of one kind, the women of another, and the children of a third. By this means an exact computation was made of the men, women, and children, in each tribe.

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42 Enlarges the city, and adds a fourth tribe to thoſe already inſtituted.

In the mean time, his two wards, Lucius Tarquinius and Arunx, the grandchildren of Tarquin, being grown up, in order to ſecure their fidelity, he married them to his two daughters. And though the elder of theſe daughters, who was of a mild and tractable diſpoſition, reſembled in character the younger of his pupils, as the elder of his pupils did the younger of his daughters, who was of a violent and vicious temper, yet he thought it adviſable to give his elder daughter to Tarquin, and the younger to Arunx; for by that means he matched them according to their ages, and at the ſame time hoped that the elder Tullia's ſweet diſpoſition would temper Tarquin's impetuoſity, and the younger Tullia's vivacity rouſe the indolence of Arunx.

During the public rejoicing for this double marriage, the twelve lucumonies of Hetruria uniting their forces, attempted to ſhake off the Roman yoke; but were in ſeveral battles defeated by Servius, and obliged to ſubmit to him on the ſame conditions on which they had ſubmitted to his predeceſſor. For this ſucceſs Servius was honoured with a third triumph.

43 Reforms the ſtate.

The king being thus diſengaged from a troubleſome war, returned to the purſuit of his political ſchemes; and put in execution that maſterpiece of policy which Rome made uſe of ever after, and which eſtabliſhed a perpetual order and regularity in all the members of the ſtate, with reſpect to wars, to the public revenues, and the ſuffrages of the comitia. The public ſupplies had hitherto been raiſed upon the people at ſo much an head, without any diſtinction of rich and poor; whence it likewiſe followed, that when levies were made for the war, the rich and poor were equally obliged to take the field, according to the order of their tribe; and as they all ſerved at their own expence, the poorer ſort could hardly bear the charges of a campaign. Beſides, as the moſt indigent of the people ſaw themſelves burdened with the ſame taxes as the rich, they pretended to an equal authority in the comitia: ſo that the election of kings and magiſtrates, the making of peace or war, and the judging of criminals, were given up into the hands of a populace who were eaſily corrupted, and had nothing to loſe. Servius formed a project to reme-

Rome. ...d, the ſame year, and put it in execution, by enacting a law, commanding all the Roman citizens to bring in an account in writing of their own names and ages, and of the names of their fathers, wives, and children. By the ſame law, all heads of families were commanded to deliver in upon oath a juſt eſtimate of their effects, and to add to it the places of their abode, whether in town or country. Whoever did not bring in an account of his effects, was to be deprived of his eſtate, to be beat with rods, and publicly ſold for a ſlave. Servius, from theſe particular accounts, which might be pretty well relied on, undertook to eaſe the poor by burdening the rich, and at the ſame time to please the latter by increaſing their power.

...ſion of the citizens into claſſes.

To this end, he divided the Roman people into ſix claſſes; the firſt claſs conſiſted of thoſe whoſe eſtates and effects amounted to the value of 10,000 drachmæ, or 100,000 aſes of braſs; the firſt way of computing being uſed by the Greeks, and the latter by the Latins. This claſs was ſubdivided into 80 centuries, or companies of foot. To theſe Servius joined 18 centuries of Roman knights, who fought on horſeback; and appointed this conſiderable body of horſemen to be at the head of the firſt claſs, becauſe the eſtates of theſe knights, without all doubt, exceeded the ſum neceſſary to be admitted into it. However, the public ſupplied them with horſes; for which a tax was laid upon widows, who were exempt from all other tributes. This firſt claſs, including infantry and cavalry, conſiſted of 98 centuries. The ſecond claſs comprehended thoſe whoſe eſtates were valued at 5700 drachmæ, or 75,000 aſes of braſs. It was ſubdivided into 20 centuries, all foot. To theſe were added two centuries of carpenters, ſmiths, and other artificers. In the third claſs were thoſe who were eſteemed worth 5000 drachmæ, or 50,000 aſes. This claſs was ſubdivided into 20 centuries. The fourth claſs was of thoſe whoſe effects were rated at the value of 500 drachmæ, or 25,000 aſes, and was divided into 20 centuries; to which were added two other centuries of trumpets, and blowers of the horn, who ſupplied the whole army with this martial muſic. The fifth claſs included thoſe only whoſe whole ſubſtance did not amount to more than 1250 drachmæ, or 12,500 aſes; and this claſs was divided into 30 centuries. The ſixth claſs comprehended all thoſe who were not worth ſo much as thoſe of the fifth claſs: they exceeded in number any other claſs, but nevertheleſs were reckoned but as one century.

The king drew from theſe regulations all the advantages he had expected. Levies for the army were no longer raiſed by tribes, nor were taxes laid at ſo much a head as formerly, but all was levied by centuries. When, for inſtance, an army of 20,000 men, or a large ſupply of money, was wanted for the war, each century furniſhed its quota both of men and money: ſo that the firſt claſs, which contained more centuries, though fewer men, than all the others together, furniſhed more men and more money for the public ſervice than the whole Roman ſtate beſides. And by this means the Roman armies conſiſted for the moſt part of the rich citizens of Rome; who, as they had lands and effects to defend, fought with more reſolution, while their riches enabled them to bear the expence of a campaign. As it was but juſt the king ſhould make the firſt claſs amends for the weight laid on it, he gave it almoſt the whole authority in public affairs; changing the comitia by curiæ, in which every man gave his vote, into comitia by centuries, in which the majority was not reckoned by ſingle perſons, but by centuries, how few ſoever there might be in a century. Hence the firſt claſs, which contained more centuries than the other five taken together, had every thing at its diſpoſal. The votes of this claſs were firſt taken; and if the 98 centuries happened to agree, or only 97 of them, the affair was determined; becauſe theſe made the majority of the 193 centuries which compoſed the ſix claſſes. If they diſagreed, then the ſecond, the third, and the other claſſes in their order, were called to vote, though there was very ſeldom any occaſion to go ſo low as the fourth claſs for a majority of votes: ſo that by this good order Servius brought the affairs of the ſtate to be determined by the judgment of the moſt conſiderable citizens, who underſtood the public intereſt much better than the blind multitude, liable to be impoſed upon, and eaſily corrupted.

45 The cenſus and luſtrum.

And now the people being thus divided into ſeveral orders, according to the cenſus or valuation of their eſtates, Servius reſolved to ſolemnize this prudent regulation by ſome public act of religion, that it might be the more reſpected and the more laſting. Accordingly, all the citizens were commanded to appear, on a day appointed, in the Campus Martius, which was a large plain, lying between the city and the Tiber, formerly conſecrated by Romulus to the god Mars. Here the centuries being drawn up in battalia, a ſolemn luſtration or expiatory ſacrifice was performed in the name of all the people. The ſacrifice conſiſted of a ſow, a ſheep, and a bull, whence it took the name of *ſuovetaurilia*. The whole ceremony was called *luſtrum, à luendo*; that is, from paying, expiating, clearing, or perhaps from the goddeſs Lua, who preſided over expiations, and to whom Servius had dedicated a temple. This wiſe king conſidering, that in the ſpace of five years there might be ſuch alterations in the fortunes of private perſons as to entitle ſome to be raiſed to an higher claſs, and reduce others to a lower, enjoined that the cenſus ſhould be renewed every five years. As the cenſus was uſually cloſed by the luſtrum, the Romans henceforth began to compute time by luſtrums, each luſtrum containing the ſpace of five years. However, the luſtrums were not always regularly obſerved, but often put off, though the cenſus had been made in the fifth year. Some writers are of opinion, that Servius at this time coined the firſt money that had ever appeared at Rome; and add, that the circumſtances of the luſtrum probably led him to ſtamp the figures of the animals there ſlain on pieces of braſs of a certain weight.

46 The freedmen.

The government of the city being thus eſtabliſhed in ſo regular a manner, Servius, touched with compaſſion for thoſe whom the misfortunes of an unſucceſsful war had reduced to ſlavery, thought that ſuch of them as had by long and faithful ſervices deſerved and obtained their freedom, were much more worthy of being made Roman citizens, than untractable vagabonds from foreign countries, who were admitted without diſtinction. He therefore gave the freedmen their choice, either to return to their own country, or continue at Rome. Thoſe who choſe to continue there, he divided into four tribes, and ſettled them within the city;

Rome. and though they were diſtinguiſhed from the plebians by their old name of *liberti* or *freedmen*, yet they enjoyed all the privileges of free citizens. The ſenate took offence at the regard which the king ſhowed to ſuch mean people, who had but lately ſhaken off their fetters; but Servius, by a moſt humane and judicious diſcourſe, entirely appeaſed the fathers, who paſſed his inſtitution into a law, which ſubſiſted ever after. Rome.

47 Reforms the royal power. The wiſe king, having thus eſtabliſhed order among the people, undertook at laſt to reform the royal power itſelf; his equity, which was the main ſpring of all his reſolutions, leading him to act contrary to his own intereſt, and to ſacrifice one half of the royal authority to the public good. His predeceſſors had reſerved to themſelves the cognizance of all cauſes both public and private; but Servius, finding the duties of his office too much for one man to diſcharge well, committed the cognizance of ordinary ſuits to the ſenate, and reſerved that only of ſtate-crimes to himſelf.

48 Endeavours to attach the Sabines and Latins to the Romans. All things being now regulated at home, both in the city and country, Servius turned his thoughts abroad, and formed a ſcheme for attaching the Sabines and Latins to the Romans, by ſuch ſocial ties as ſhould be ſtrengthened by religion. He ſummoned the Latin and Sabine cities to ſend their deputies to Rome, to conſult about an affair of great importance. When they were come, he propoſed to them the building of a temple in honour of Diana, where the Latins and Sabines ſhould meet once a year, and join with the Romans in offering ſacrifices to that goddeſs; that this feſtival ſhould be followed by a council, in which all diſputes between the cities ſhould be amicably determined; that there proper meaſures ſhould be taken to purſue their common intereſt; and, laſtly, in order to draw the common people thither, a fair ſhould be kept, at which every one might furniſh himſelf with that he wanted. The king's deſign met with no oppoſition: the deputies only added to it, that the temple ſhould be an inviolable aſylum for the united nations; and that all the cities ſhould contribute toward the expence of building it. It being left to the king to chooſe a proper place for it, he pitched upon the Aventine hill, where the temple was built, and aſſemblies annually held in it. The laws which were to be obſerved in theſe general meetings were engraved on a pillar of braſs, and were to be ſeen in Auguſtus's time, in the Latin tongue, but in Greek characters.

49 Wicked intrigues of his daughter and ſon-in-law. But now Servius was grown old; and the ambition of Tarquin his ſon-in-law revived in proportion as the king advanced in years. His wife uſed her utmoſt endeavours to check the raſhneſs and fury of her huſband, and to divert him from all criminal enterpriſes; while her younger ſiſter was ever inſtigating Arunx, who placed all his happineſs in a private life, to the moſt villanous attempts. She was continually lamenting her fate in being tied to ſuch an indolent huſband, and wiſhing ſhe had either continued unmarried, or were become a widow. Similitude of temper and manners, formed, by degrees, a great intimacy between her and Tarquin. At length ſhe propoſed nothing leſs to him than the murdering of her father, ſiſter, and huſband, that they two might meet and aſcend the throne together. Soon after, they paved their way to an inceſtuous marriage, he by poiſoning his wife, and ſhe her huſband; and then had the aſſurance to aſk the king's and queen's conſent to their marriage. Servius and Tarquinia, though they did not give it, were ſilent, through too much indulgence to a daughter in whom now was their only hope of poſterity. But theſe criminal nuptials were only the firſt ſtep towards a yet greater iniquity. The wicked ambition of the new-married couple firſt ſhowed itſelf againſt the king: for they publicly declared, that the crown belonged to them; that Servius was an uſurper, who, being appointed tutor to Tarquin's grandchildren, had deprived his pupils of their inheritance; that it was high time for an old man, who was but little able to ſupport the weight of public affairs, to give place to a prince who was of a mature age, &c.

The patricians, whom Servius had taken great pleaſure in humbling during the whole time of his reign, were eaſily gained over to Tarquin's party; and, by the help of money, many of the poorer citizens were alſo brought over to his intereſt. The king, being informed of their treaſonable practices, endeavoured to diſſuade his daughter and ſon-in-law from ſuch proceedings, which might end in their ruin; and exhorted them to wait for the kingdom till his death. But they, deſpiſing his counſels and paternal admonitions, reſolved to lay their claim before the ſenate; which Servius was obliged to ſummon: ſo that the affair came to a formal proceſs. Tarquin reproached his father-in-law with having aſcended the throne without a previous interregnum; and with having bought the votes of the people, and deſpiſed the ſuffrages of the ſenate. He then urged his own right of inheritance to the crown, and injuſtice of Servius, who, being only his guardian, had kept poſſeſſion of it, when he himſelf was of an age to govern. Servius anſwered, that he had been lawfully elected by the people; and that, if there could be any hereditary right to the kingdom, the ſons of Ancus had a much better one than the grandſons of the late king, who muſt himſelf have been an uſurper. He then referred the whole to an aſſembly of the people; which being immediately proclaimed all over the city, the forum was ſoon filled; and Servius harangued the multitude in ſuch a manner as gained all their affections. They all cried out with one voice, *Let Servius reign; let him continue to make the Romans happy.* Amidſt their confuſed clamours, theſe words were likewiſe heard: *Let Tarquin periſh; let him die; let us kill him.* This language frightened him ſo, that he retired to his houſe in great haſte; while the king was conducted back to his palace with the acclamations of the people.

The ill ſucceſs of this attempt cooled Tarquin's ardent deſire of reigning; but this ambition made him act a new part. He undertook to regain the favour of his father-in-law by careſſes, ſubmiſſions, and proteſtations of a ſincere regard and affection for him; inſomuch that the king, who judged of the policy of others from his own, was ſincerely reconciled to him, and tranquillity re-eſtabliſhed in the royal family. But it was not long ere Tarquin, rouſed by the continual reproaches of his wife, began to renew his intrigues among the ſenators; of whom he had no ſooner gained a conſiderable party, than he clothed himſelf in the royal robes, and cauſing the faſces to be carried before him by ſome of his domeſtics, croſſed the Roman forum, entered the temple where the ſenate uſed to meet, and ſeated himſelf

Rome. felt on the throne. Such of the ſenators as were in the faction he found already in their places (for he had given them private notice to be there early); and the reſt, being ſummoned to aſſemble in Tarquin's name, made what haſte they could to the appointed place, thinking that Servius was dead, ſince Tarquin aſſumed the title and functions of king. When they were all aſſembled, Tarquin made a long ſpeech, reviling his father-in-law, and repeating the invectives againſt him, which he had ſo often uttered, calling him a ſlave, an uſurper, a favourer of the populace, and an enemy to the ſenate and patricians. When he was yet ſpeaking, Servius arrived; and, raſhly giving way to the motions of his courage, without conſidering his ſtrength, drew near the throne, to pull Tarquin down from it. This raiſed a great noiſe in the aſſembly, which drew the people into the temple; but nobody ventured to part the two rivals. Tarquin therefore, being more ſtrong and vigorous, ſeized the old man by the waiſt, and, hurrying him through the temple, threw him down from the top of the ſteps into the forum. The king, who was grievouſly wounded, raiſed himſelf up with ſome difficulty: but all his friends had abandoned him; only two or three of the people, touched with compaſſion, lent him their arms to conduct him to his palace.

As they were leading him on ſo ſlowly, the cruel Tullia appeared in the forum, whither ſhe had haſtened in her chariot on the firſt report of what had paſſed in the ſenate. She found her huſband on the top of the ſteps of the temple; and, tranſported with joy, was the firſt who ſaluted him king. The example was immediately followed by the ſenators of Tarquin's party. Nor was this enough for the unnatual daughter: ſhe took aſide her huſband, and ſuggeſted to him, that he would never be ſafe ſo long as the uſurper of his crown was alive. Hereupon Tarquin inſtantly diſpatched ſome of his domeſtics to take away the remains of the unfortunate king's life. The orders for the wicked parricide were no ſooner given than Tullia mounted her chariot again, with an air of triumph, to return home. The way to her houſe was through a narrow ſtreet, called *vicus cyprius*, or the *good ſtreet*. There the aſſaſſins had left the king's body, which was ſtill panting. At this ſight, the charioteer, ſtruck with horror, checked his horſes, and made a ſtop: but Tullia forced him to go on; and the blood of the father is ſaid to have dyed the wheels of the chariot, and even the clothes of the inhuman daughter, whence the ſtreet was called ever after *vicus ſceleratus*.

50 Servius Tullius murdered.

The new king proved a moſt deſpotic and cruel tyrant; receiving, in the very beginning of his reign, the ſurname of *proud*, on account of his capricious humour and haughty behaviour. All controverſies whatever were decided by himſelf and his friends; and he baniſhed, fined, and even executed, whom he pleaſed. The cenſus and luſtrum, the diviſion of citizens into claſſes and centuries, were aboliſhed; and all kinds of aſſemblies, even thoſe for amuſement and recreation, were prohibited, both in town and country. Nay, to ſuch a height did Tarquin carry his inſolence and tyranny, that the moſt virtuous of the ſenators went into voluntary baniſhment; while many of thoſe who remained were cut off on various pretences, that the king might enjoy their eſtates.

Of Tarquin's cruelty.

Tarquin could not but be ſenſible of the extreme danger in which he ſtood by loſing the affections of his people in ſuch a manner. He therefore provided a ſufficient number of ſoldiers, by way of guard, to prevent attempts upon his perſon; and gave his daughter to Octavius Mamilius, one of the moſt conſiderable men among the Latins, in order to ſtrengthen his intereſt by this foreign alliance, in caſe of a revolt among his ſubjects. Mamilius accordingly procured many friends to his father-in-law, but he had like to have loſt them again by his haughty behaviour. He had deſired the Latins to call a national council at Ferentinum, where he would meet them on a day appointed by himſelf. The Latins accordingly met; but after waiting for ſeveral hours, Tarquin did not appear. On this, one Turnus Herdonius, an enterpriſing and eloquent man, who hated Tarquin, and was jealous of Mamilius, made a ſpeech, in which he inveighed againſt the haughty behaviour of Tarquin, ſet forth the contempt which he had put upon the Latins, and concluded with deſiring the council to break up and return home without taking any further notice of him. Mamilius, however, prevailed upon them to return the day following; when Tarquin made his appearance, and told the aſſembly that his deſign in calling them together was to claim his right of commanding the Latin armies, which he ſaid was derived from his grandfather, but which he deſired to be confirmed to him by them. Theſe words were ſcarce out of his mouth, when Herdonius, riſing up, entered into a detail of Tarquin's tyranny and arbitrary behaviour at Rome, which, he ſaid, the Latins would ſoon feel in an equal degree, if they complied with Tarquin's demand. To this ſpeech the king made no reply at that time, but promiſed to anſwer him next day. In the mean time, however, he bribed the domeſtics of Herdonius to admit among his baggage a large quantity of arms: and then, telling the Latins that Herdonius's oppoſition proceeded only from Tarquin's having refuſed him his daughter in marriage, accuſed him of having laid a plot to cut off all the deputies there preſent, and to uſurp a juriſdiction over the Latin cities; as a proof of which he appealed to the arms hid among the baggage of Herdonius. The accuſed, conſcious of his innocence, deſired that his baggage might be ſearched; which being accordingly done and the arms found, he was hurried away without being allowed to make any defence, and thrown into a baſon at the head of the ſpring of Ferentinum, where a hurdle being laid upon him, and ſtones laid upon the hurdle, he was preſſed down into the water and drowned.

52 His infamous ſtratagem to deſtroy Herdonius.

In conſequence of this monſtrous treachery, Tarquin was looked upon by the Latins as their deliverer, and declared general of the Latin armies; ſoon after which, the Hernici and two tribes of the Volſci entered into an alliance with him on the ſame terms. In order to keep theſe confederates together, Tarquin, with their conſent, erected a temple to Jupiter Latialis on an hill near the ruins of Alba, where he appointed certain feaſts called *Feriæ Latinæ* to be held on the 27th of April, where the ſeveral nations were to ſacrifice together, and on no account to commit any hoſtilities againſt each other during their continuance. The king then proceeded to make war on the reſt of the Volſci who had refuſed to enter into an alliance with him. Some depredations which they had committed in the territo-

53 Inſtitutes the Feriæ Latinæ.

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Rome. ries of the Latins ſerved for a pretence to begin the war; but as Tarquin had no confidence in the Romans, his army was compoſed only of a ſmall body of them who were incorporated among the Latin auxiliaries. However, he defeated the enemy, took one of their cities by ſtorm, and gave the booty to his ſoldiers. He next turned his arms againſt the Sabines, whom he entirely defeated in two engagements, and made the whole nation tributary; for which exploits he decreed himſelf two triumphs, and on his return to Rome he employed the populace in finiſhing the ſewers and circus which had been begun by his grandfather Tarquin I.

54 Reduces Gabii by treachery. In the mean time, the perſecutions of Tarquin againſt his own ſubjects daily drove ſome of the moſt conſiderable into baniſhment. A great number of patricians took refuge in Gabii, a city of Latium about 13 miles from Rome; where the inhabitants, touched with compaſſion for their misfortunes, not only received them with kindneſs, but began a war with Tarquin on their account. The Gabini ſeem to have been the moſt formidable enemies whom the Romans had hitherto met with; ſince Tarquin was obliged to raiſe a prodigious bulwark to cover the city on the ſide of Gabii. The war laſted ſeven years; during which time, by the mutual devaſtations committed by the two armies, a great ſcarcity of proviſions took place in Rome. The people ſoon grew clamorous; and Tarquin being unable either to quiet them, or to reduce the Gabini, fell upon the following diſhonourable and treacherous expedient. His ſon Sextus Tarquinius pretended to be on very bad terms with his father, and openly inveighed againſt him as a tyrant; on which he was proclaimed a rebel, and publicly beaten in the forum. This being reported at Gabii, by perſons ſent thither on purpoſe, the inhabitants became very deſirous of having Sextus among them; and accordingly he ſoon went thither, having previouſly obtained a ſolemn promiſe from the inhabitants never to deliver him up to his father. Here he made frequent inroads into the Roman territories, and always came back laden with ſpoil, his father ſending againſt him only ſuch weak parties as muſt infallibly be worſted. By this means he ſoon came to have ſuch a high degree of credit among the Gabini, that he was choſen general of their army, and was as much maſter at Gabii as Tarquin was at Rome. Finding then that his authority was ſufficiently eſtabliſhed, he diſpatched a ſlave to his father for inſtructions; but the king unwilling to return an explicit anſwer, only took the meſſenger into the garden, where he ſtruck off the heads of the talleſt poppies. Sextus underſtood that by this hint the king deſired him to put to death the leading men in the city of Gabii, which he immediately put in execution; and while the city was in confuſion on account of this maſſacre, he opened the gates to his father, who took poſſeſſion of the city with all the pride of a conqueror.—The inhabitants dreaded every thing from the haughty tyranny of the Roman monarch: however, on this occaſion he conſulted his policy rather than his revenge; granted them their life, liberty, and eſtates, and even entered into a treaty of alliance with them. The articles were written on the hide of an ox, which was ſtill to be ſeen in the time of Auguſtus, in the temple of Jupiter Fidius. After this, however, he made his ſon Sextus king of Gabii; ſending off alſo his two other ſons, Titus and Arunx, the one to build Rome. a city at Signia, the other at Circæum, a promontory of the Tyrrhene ſea, and both theſe to keep the Volſci in awe.

For ſome time Tarquin now enjoyed a profound peace; the Romans, being accuſtomed to oppreſſion and the yoke of an imperious maſter, making no oppoſition to his will. During this interval Tarquin † See Sibyl met with the celebrated adventure of the Sibyl †; whoſe books were ever afterwards held in high eſtima- 55 Books of the Sibyls. tion at Rome, and Tarquin appointed two perſons of diſtinction to take care of them. Theſe were called *Duumviri*: but their number was afterwards increaſed to 10, when they were called *Decemviri*; and then to 15, when they were termed *Quindecemviri*. At this time alſo the written civil law had its origin among the Romans; all the ſtatutes enacted by the kings being collected into one body; which, from Papirius the name of the collecter, was called the *Papirian* law. The temple of the Capitol was alſo finiſhed; for which purpoſe the moſt ſkilful architects and workmen were brought from Hetruria, the populace being obliged to ſerve them in the moſt laborious parts.

56 Downfal of the regal power. We now come to the important revolution which put an end to the regal power at Rome, and introduced a new form of government, to which this city is allowed to owe the greateſt part of her grandeur. Tarquin, as we have already ſeen, had left himſelf no friends among the rich citizens, by reaſon of the oppreſſion under which he made them labour; and the populace were equally diſaffected on account of their being obliged to labour in his public works. Among the many perſons of diſtinction who had been ſacrificed to the avarice or ſuſpicions of Tarquin, was one M. Junius, who had married the daughter of Tarquin I. This nobleman had a ſon named *L. Junius Brutus*, who eſcaped the cruelty of the tyrant by pretending to be an idiot, which part he had ever ſince continued to act. Soon after the finiſhing of the works abovementioned, a violent plague happening to break out at Rome, Tarquin ſent his ſons Titus and Arunx to conſult the oracle of Delphi; and the princes took Brutus along with them, to divert themſelves with his pretended folly by the way. Brutus choſe for his offering to the Delphic Apollo a ſtick of elder; which occaſioned much laughter. However, he had the precaution to incloſe a rod of gold within the ſtick; and to this probably it was owing that the prieſteſs gave the princes the following riddle, that he who ſhould firſt kiſs his mother ſhould ſucceed Tarquin in the government of Rome. This anſwer had been given to their inquiries concerning the ſucceſſion; upon which the two brothers either drew lots which of them ſhould kiſs ther mother at their return, or agreed to do it at once, that both might reign jointly: but Brutus, imagining the oracle had another meaning, fell down and kiſſed the earth, the common mother of all living. This, in all probability, the prieſteſs had meant; and had given the anſwer on purpoſe to have another proof of Brutus's ingenuity, which had already diſcovered itſelf, by his offering the elder ſtick.

On the return of the princes to Rome, they found their father engaged in a war with the Rutuli. The treaſury being exhauſted by the ſums which Tarquin had expended in his public works, he had marched to

Rome. Ardea, the capital of that nation, which lay about 20 miles from Rome, in hopes of taking it without oppoſition. Contrary to his expectation, however, he was obliged to beſiege it in form; and this contrained him to lay a heavy tax upon his ſubjects, which increaſed the number of malcontents, and diſpoſed every thing for a revolt. As the ſiege was carried on very ſlowly, the general officers frequently made entertainments for one another in their quarters. One day, when Sextus Tarquinius was entertaining his brothers, the converſation happened to turn upon their wives: every one extolled the good qualities of his own; but Collatinus beſtowed ſuch extravagant praiſes on his Lucretia, that the diſpute ended in a kind of quarrel. It was then reſolved that they ſhould mount their horſes and ſurpriſe their wives by their unexpected return. The king's daughters-in-law were employed in feaſting and diverſion, and ſeemed much diſconcerted by the appearance of their huſbands; but Lucretia, though the night was far advanced, was found, with her maids about her, ſpinning and working in wool. She was not at all diſcompoſed by the company whom her huſband brought with him, and they were all pleaſed with the reception ſhe gave them. As Lucretia was very beautiful, Sextus Tarquinius conceived a paſſion for her, which reſolving to ſatisfy at all events, he ſoon returned to Collatia in the abſence of Lucretia's huſband, and was entertained by her with great civility and reſpect. In the night-time he entered Lucretia's apartment, and threatened her with immediate death if ſhe did not yield to his deſires. But finding her not to be intimidated with this menace, he told her, that, if ſhe ſtill perſiſted in her refuſal, he would kill one of her male ſlaves, and lay him naked by her when ſhe was dead, and then declare to all the world that he had only revenged the injury of Collatinus. On this the virtuous Lucretia (who, it ſeems, dreaded proſtitution leſs than the infamy attending it) ſubmitted to the deſires of Sextus; but reſolved not to outlive the violence which had been offered her. She dreſſed herſelf in mourning, and took a poniard under her robe, having previouſly wrote to her huſband to meet her at her father Lucretius's houſe, where ſhe refuſed to diſcover the cauſe of her grief except in a full aſſembly of her friends and relations. Here, addreſſing herſelf to her huſband Collatinus, ſhe acquainted him with the whole affair; exhorted them to revenge the injury; and proteſted that ſhe would not ſurvive the loſs of her honour. Every one preſent gave her a ſolemn promiſe that they would revenge her quarrel; but while they endeavoured to comfort her, ſhe ſuddenly ſtabbed herſelf to the heart with the dagger which ſhe had concealed under her robe. See CHASTITY.

57 Lucretia, raviſhed by Sextus Tarquinius, kills herſelf.

This extravagant action inflamed beyond meaſure the minds of all preſent. Brutus, laying aſide his pretended folly, drew the bloody dagger out of Lucretia's body; and, ſhowing it to the aſſembly, ſwore by the blood upon it that he would purſue Tarquin and his family with fire and ſword: nor would he ever ſuffer that or any other family to reign in Rome. The ſame oath was taken by all the company; who were ſo much ſurpriſed at the apparent tranſition of Brutus from folly to wiſdom, that they did whatever he deſired them.—By his advice the gates of the city were ſhut, that nobody might go out of it to inform Tarquin of what was going forward; which, as Lucretius had been left governor of the city by Tarquin, was put in execution without difficulty. The corpſe of Lucretia was then expoſed to public view; and Brutus having made a ſpeech to the people, in which he explained the myſtery of his conduct in counterfeiting folly for many years paſt, proceeded to tell them that the patricians were come to a reſolution of depoſing the tyrant, and exhorted them to concur in the ſame deſign. The people teſtified their approbation, and called out for arms; but Brutus did not think proper to truſt them with arms till he had firſt obtained a decree of the ſenate in favour of the deſign. This was eaſily procured: the ſenate enacted that Tarquin had forfeited all the prerogatives belonging to the regal authority, condemned him and all his poſterity to perpetual baniſhment, and devoted to the gods of hell every Roman who ſhould hereafter, by word or deed, endeavour his reſtoration; and this decree was unanimouſly confirmed by the curiæ. Rome.

58 Tarquin depoſed.

Tarquin being thus depoſed, the form of government became the next object. Lucretius was for the preſent declared *Interrex*; but Brutus being again conſulted, declared, that though it was by no means proper for the ſtate to be without ſupreme magiſtrates, yet it was equally neceſſary that the power ſhould not be centered in one man, and that it ſhould not be perpetual. For this reaſon he propoſed, that two magiſtrates, called *conſuls*, ſhould be elected annually; that the ſtate ſhould thenceforth have the name of *republic*; that the enſigns of royalty ſhould be aboliſhed; and that the only enſigns of conſular dignity ſhould be an ivory chair, a white robe, and 12 lictors for their attendants. However, that he might not utterly aboliſh the name of *king*, he propoſed that this title ſhould be given to him who had the ſuperintendency of religous matters, who ſhould thenceforth be called *rex ſacrorum*, or *king of ſacred things*.

59 The form of government changed.

This ſcheme of Brutus being approved of, Brutus and Collatinus were propoſed by Lucretius as the two firſt conſuls, and unanimouſly accepted by the people, who thought it was impoſſible to find more implacable enemies to the Tarquins. They entered on their office in the year 508 B. C.; and Tullia, perceiving that now all was loſt, thought proper to leave the city, and retire to her huſband at Ardea. She was ſuffered to depart without moleſtation, though the populace hooted at her, and curſed her as ſhe went along. Tarquin, in the mean time, being informed by ſome who had got out of Rome before the gates were ſhut, that Brutus was raiſing commotions to his prejudice, returned in haſte to the city, attended only by his ſons and a few friends; but, finding the gates ſhut, and the people in arms on the walls, he returned again to the camp: but here again, to his ſurpriſe, he found that the conſuls had taken the opportunity of gaining over the army to their intereſt; ſo that, being refuſed admittance into the camp alſo, he was forced to fly for refuge, at the age of 76, with his wife and three ſons, to Gabii, where Sextus had been made king. Here he continued for ſome time: but not finding the Latins very forward to revenge his cauſe, he retired into Hetruria; where, being the country of his mother's family, he hoped to find more friends, and a readier aſſiſtance for attempting the recovery of his throne.

60 Tullius leaves Rome.

The

Rome.

The Romans now congratulated themſelves on their happy deliverance from tyranny. However, as Tarquin had by his policy procured himſelf many friends abroad, theſe now became enemies to the Roman name; and, by the defection of their allies, the Roman dominions were left in much the ſame ſtate as they had been in the time of Romulus. The territory of Rome had always been confined to a very narrow compaſs. Though almoſt conſtantly victorious in war for 243 years, they had not yet gained land enough to ſupply their city with proviſions. The main ſtrength of the ſtate lay in the number of the citizens of Rome; which the cuſtom of tranſplanting the inhabitants of the conquered cities thither had ſo prodigiouſly increaſed, that it put the Romans in a condition of uſurping the authority over other nations, the moſt inconſiderable of which had an extent of territory far exceeding theirs. By frequent depredations and incurſions they ſo haraſſed the petty ſtates of Latium and Hetruria, that many of them were conſtrained to enter into treaties with Rome, by which they obliged themſelves to furniſh her with auxiliaries whenever ſhe ſhould be pleaſed to invade and pillage the lands of her other neighbours. Submiſſions of this kind the Romans called *making alliances* with them, and theſe uſeful alliances ſupplied the want of a larger territory; but now, upon the change of her government, all the allies of Rome forſook her at once, and either ſtood neuter, or eſpouſed the cauſe of the baniſhed king; ſo that ſhe was now obliged to maintain her liberties as ſhe beſt might.

61 State of the Roman empire at this time.

The new conſuls in the mean time took the moſt effectual methods they could for ſecuring the liberties of the republic. The army which had been employed in the ſiege of Ardea marched home under the conduct of Herminius and Horatius, who concluded a truce with the Ardeates for 15 years. The conſuls then again aſſembled the people by centuries, and had the decree of Tarquin's baniſhment confirmed; a *rex ſacrorum* was elected to preſide at the ſacrifices, and many of the laws of Servius Tullius were revived to the great joy of the people, who were thus reſtored to their ancient right of voting in all important affairs. Tarquin, however, reſolved not to part with his kingdom on ſuch eaſy terms. Having wandered from city to city in order to move compaſſion, he at length made Tarquinii the ſeat of his reſidence; where he engaged the inhabitants to ſend an embaſſy to Rome, with a modeſt, ſubmiſſive letter from himſelf, directed to the Roman people. The ambaſſadors repreſented in ſuch ſtrong terms to the ſenate how reaſonable it was to let the king be heard before he was condemned, and the danger which threatened the ſtate from the neighbouring powers if that common juſtice were refuſed, that the conſuls inclined to bring theſe agents before the people, and to leave the deciſion thereof to the curiæ; but Valerius, who had been very active in the revolution, ſtrenuouſly oppoſed this, and by his influence in the ſenate got it prevented. As that illuſtrious body had been greatly thinned by the murders committed by Tarquin, new members were elected from among the knights, and the ancient number of 300 again completed. The old ſenators had been called *patres* or "fathers;" and as the names of the new ones were now written on the ſmall roll, the whole body received the name of *patres conſcripti*.

62 Tarquin writes to the Roman people.

The old king was not to be foiled by a ſingle attempt. He prevailed on the inhabitants of Tarquinii to ſend a ſecond embaſſy to Rome, under pretence of demanding the eſtates of the exiles, but with private inſtructions to get the conſuls aſſaſſinated. The reſtoration of the eſtates of the exiles was oppoſed by Brutus, but Collatinus was for complying with it; whereupon Brutus accuſed his colleague of treachery, and of a deſign to bring back the tyrant. The matter was then referred to the people, where it was carried by one vote in favour of the Tarquins. But whilſt the people were employed in loading carriages with the effects of the exiles, and in ſelling what could not be carried off, the ambaſſadors found means to draw ſome of the neareſt relations of the conſuls into a plot with them. Theſe were three young noblemen of the Aquilian family (the ſons of Collatinus's ſiſter), and two of the Vitellii (whoſe ſiſter Brutus had married); and theſe laſt engaged Titus and Tiberius, the two ſons of Brutus, in the ſame conſpiracy. They all bound themſelves by ſolemn oaths, with the dreadful ceremony of drinking the blood of a murdered man and touching his entrails. They met at the houſe of the Aquilii, where they wrote letters to Tarquin and gave them to the ambaſſadors. But though they uſed all imaginable precaution, their proceedings were overheard by one Vindicius a ſlave, who immediately communicated the whole to Valerius; upon which all the criminals were apprehended. Brutus ſtood judge over his own ſons; and, notwithſtanding the interceſſion of the whole aſſembly, and the tears and lamentations of his children, commanded them to be beheaded; nor would he depart till he ſaw the execution of the ſentence. Having performed this piece of heroic barbarity, he quitted the tribunal, and left Collatinus to perform the reſt. Collatinus, however, being inclined to ſpare his nephews, allowed them a day to clear themſelves; and cauſed Vindicius, the only witneſs againſt them, to be delivered up to his maſters. This rouſed the indignation of the people in general, eſpecially of Valerius, who had promiſed to protect the witneſs, and therefore he refuſed to deliver him up to the lictors. The multitude called aloud for Brutus to return; which when he had done, he told them that he had executed his two ſons in conſequence of his own paternal authority over them, but that it belonged to the people to determine the fate of the reſt. Accordingly, by a decree of the curiæ, all the delinquents ſuffered as traitors except the ambaſſadors, who were ſpared out of reſpect to their character. The ſlave Vindicius had his liberty granted him; and was preſented with 25,000 aſes of braſs, in value about 360 Spaniſh dollars. The decree for reſtoring the eſtates of the exiled Tarquins was annulled, their palaces were deſtroyed, and their lands divided among the indigent people. The public only retained a piece of ground near the Campus Martius, which the king had uſurped. This they conſecrated to Mars, and it afterwards became a common field where the Roman youth exerciſed themſelves in running and wreſtling. But after this conſecration, the ſuperſtitious Romans ſcrupled to uſe the corn which they found there ready reaped to their hands: ſo that, with ſome trees, it was thrown into the Tiber; and the water being low, it ſtopped in the middle of the river, and began to form a ſmall iſland named afterwards *Inſula Sacra*.

Rome.

63 A conſpiracy formed in his favour.

64 Brutus cauſes two of his own ſons to be beheaded.

The behaviour of Brutus towards his two ſons ſtruck

[illegible] into the Romans, that scarce any person [illegible] and therefore, as he hated Collatinus, [illegible] him before the people, and without ceremony deposed him from the consulship, banishing him at the same time from Rome. The multitude acquiesced in every thing he said, and refused to hear Collatinus speak in his own defence; so that the consul was on the point of being driven out with ignominy and disgrace, when Lucretius interposed, and prevailed upon Brutus to allow his colleague quietly to resign the fasces, and retire of his own accord from the city. Brutus then, to remove all suspicions of personal enmity, procured him a present of 20 talents out of the [illegible] treasury, to which he added five of his own. Collatinus then retired to Lavinium, where he lived in peace, and at last died of old age.

After the abdication of Collatinus, Valerius was chosen in his room; and as his temper agreed much better with Brutus than that of Collatinus, the two consuls lived in great harmony. Nothing, however, could make the [illegible] king forego the hope of recovering his kingdom by force. He first engaged the Volsci and Tarquinienses to join their forces in order to support his rights. The consuls marched out without delay to meet them. Brutus commanded the horse and Valerius the foot, drawn up in a square battalion. The two armies being in sight of each other, Brutus advanced with his cavalry, at the same time that Arunx, one of Tarquin's sons, was coming forward with the enemy's horse, the king himself following with the legions. Arunx no sooner discovered Brutus, than he made towards him with all the fury of an enraged enemy. Brutus advanced towards him with no less speed; and as both were actuated only by motives of hatred, without thoughts of self-preservation, both of them were pierced through with their lances. The death of the two generals served as a prelude to the battle, which continued with the utmost fury till night, when it could not be known which side had got the victory, or which had lost the greatest number of men. A report was spread, however, that a voice had been heard out of a neighbouring wood, declaring the Romans conquerors; and this, probably a stratagem of Valerius, operated so powerfully on the superstitious minds of the Volsci, that they left their camp in confusion, and returned to their own country. It is said that Valerius, having caused the dead to be numbered, found that the Volsci had lost 11,300 men, and the Romans only one short of that number.

Valerius being left without a colleague in the consulship, and having for some reasons delayed to choose one, began to be suspected by the people of aspiring at the sovereignty; and these suspicions were in some measure countenanced by his building a fine house on the steep part of the hill Palatinus, which overlooked the forum, and was by them considered as a citadel. But of this Valerius was no sooner informed, than he caused this house to be pulled down, and immediately called an assembly of the people for the election of a consul, in which he left them entirely free. They chose Lucretius; and, being ashamed of having suspected Valerius; they complimented him with a large [illegible] plot in an agreeable place, where they built him a house. The new consul died a few days after his promotion, so that Valerius was once more left sole governor. In the interval betwixt the death of Lucretius and the choice of another consul, Valerius gave the people so many striking proofs of his attachment to their interest, that they bestowed upon him the surname of *Poplicola* or "popular;" nor was he ever called by another name afterwards.

Rome

When Poplicola's year of consulship expired, the Romans thought fit, in consequence of the critical situation of affairs, to elect him a second time, and joined with him T. Lucretius, the brother of the famous Lucretia. They began with restoring the census and lustrum; and found the number of Roman citizens, at or above the age of puberty, to amount to 130,000. As they apprehended an attack from the Latins on account of Tarquin, they were at great pains to fortify Sinquirinum or Singliuria, an important post on that side. Contrary to their expectations, however, the Latins remained quiet; but an haughty embassy was received from Porsena king of Clusium in Hetruria, commanding them either to take back the Tarquins to Rome, or to restore them their estates. To the first of these demands the consuls returned an absolute refusal: and, as to the second, they answered, that it was impracticable; a part of those estates having been consecrated to Mars, and the rest divided among indigent people, from whom they could not be recovered. The imminent danger which now threatened the city, procured Valerius the honour of a third consulship; and with him was joined Horatius Pulvilius, who had enjoyed the dignity for a few months before in the interval betwixt the death of Lucretius and the expiration of the first consulate.

68 Porsena invades the Roman territories,

While the Romans were making the most vigorous preparations for defence, Porsena, attended by his son Arunx and the exiles, marched towards the city at the head of a formidable army, which was quickly joined by a considerable body of Latins under Mamilius, the son-in-law of Tarquin. The consuls and the senate took all imaginable care to supply the common people with provisions, lest famine should induce them to open the gates to Tarquin; and they desired the country people to lodge their effects in the fort Janiculum, which overlooked the city, and which was the only fortified place possessed by the Romans on that side the Tiber. Porsena, however, soon drove the Romans out of this fort; upon which the consuls made all their troops pass the river, and drew them up in order of battle to defend the bridge, while Porsena advanced to engage them. The victory was a long time doubtful, but at last the Romans fled. Horatius Cocles, nephew to the consul, with Sp. Lartius and T. Herminius, who had commanded the right-wing, posted themselves at the entrance of the bridge, and for a long time bravely defended it: but at last, the defensive arms of Lartius and Herminius being broken, they retired; and then Horatius desiring them to advise the consuls from him to cut the bridge at the other end, he for a while sustained the attack of the enemy alone. At last, being wounded in the thigh, and the signal given that the bridge was almost broken down, he leaped into the river, and swam across it through a shower of darts. The Romans, in token of gratitude for this eminent service, erected a statue to him in the temple of Vulcan, gave him as much land as he himself with one yoke of oxen could plough in one day; and each of the inhabitants

69 And defeats their army.

70 Bravery of Horatius Cocles.

Rome

bitants, to the number of 300,000, gave him the value of as much food as each conſumed in a day. But notwithſtanding all this, as he had loſt one eye, and from his wounds continued lame throughout the remainder of his life, theſe defects prevented his ever being raiſed to the conſulate, or inveſted with any military command.

The city was not yet fully inveſted; but as it was very difficult to find proviſions for ſuch a multitude, the inhabitants ſoon began to be in want. Porſena being informed of their difficulties, told them that he would ſupply them with proviſions if they would take back their old maſters; but to this they replied, that hunger was a leſs evil than ſlavery and oppreſſion. The conſtancy of the Romans, however, was on the point of failing, when a young patrician, named *Mutius Cordus*, with the conſent of the ſenate and conſuls, undertook to aſſaſſinate Porſena. He got acceſs to the Hetrurian camp, diſguiſed like a peaſant, and made his way to the king's tent. It happened to be the day on which the troops were all reviewed and paid; and Porſena's ſecretary, magnificently dreſſed, was ſitting on the ſame tribunal with the king. Mutius, miſtaking him for Porſena, inſtantly leaped upon the tribunal and killed him. He then attempted to make his eſcape; but being ſeized and brought back, he owned his deſign; and with a countenance expreſſive of deſperate rage and diſappointment, thruſt his hand which had miſſed the blow into a pan of burning coals which ſtood by, and there held it for a conſiderable time. On this, Porſena, changing his reſentment into admiration, granted him his life and liberty, and even reſtored him the dagger with which he intended to have ſtabbed himſelf. Mutius took it with his left hand, having loſt the uſe of the other; and from this time had the name of *Scævola*, or "left-handed." He then, in order to induce Porſena to break up the ſiege, invented a ſtory that 300 young Romans, all of them as reſolute as himſelf, had ſworn to take away the life of the king of Hetruria, or to periſh in the attempt. This had the deſired effect; Porſena ſent deputies to Rome, whoſe only demands were, that the Romans ſhould reſtore the eſtates of the Tarquins, or give them an equivalent, and give back the ſeven ſmall towns which had been formerly taken from the Veientes. The latter of theſe demands was cheerfully complied with; but the former was ſtill refuſed, until Porſena ſhould hear the ſtrong reaſons they had to urge againſt it. A truce being agreed on, deputies were ſent to the Hetrurian camp to plead the Roman cauſe againſt the Tarquins, and with them ten young men, and as many virgins, by way of hoſtages for performing the other article.

71 Attempt of Mutius Cordus to aſſaſſinate Porſena.

The reception which Porſena gave the deputies raiſed the jealouſy of the Tarquins; who ſtill retaining their ancient pride, refuſed to admit Porſena for a judge between them and the Romans. But the king without any regard to their oppoſition, reſolved to ſatisfy himſelf, by an exact inquiry, whether the protection he had given the Tarquins was juſt. But while the cauſe was ready to be opened before the Roman deputies, news were brought that the young women whom the Romans had ſent as hoſtages had ventured to ſwim acroſs the Tiber, and were returned to Rome. They had gone to bathe in the river, and Clælia happening to turn her eyes towards her native city, that

72 Adventure of Clælia.

fight raiſed in her a deſire of returning to it. She therefore ventured to ſwim acroſs the river; and having encouraged her companions to follow her, they all got ſafe to the oppoſite ſhore, and returned to their fathers houſes. The return of the hoſtages gave the conſul Poplicola great uneaſineſs; he was afraid leſt this raſh action might be imputed to want of fidelity in the Romans. To remove therefore all ſuſpicions, he ſent a deputation to the Hetrurian camp, aſſuring the king that Rome had no ſhare in the fooliſh attempt of the young women; and promiſing to ſend them immediately back to the camp from whence they had fled. Porſena was eaſily appeaſed; but the news of the ſpeedy return of the hoſtages being known in the camp, the Tarquins, without any regard to the truce, or reſpect to the king their protector, lay in ambuſh on the road to ſurpriſe them. Poplicola having put himſelf at the head of the Roman troops who eſcorted them, ſuſtained the attack of the Tarquins, though ſudden and unexpected, till his daughter Valeria rode full ſpeed to the Hetrurian camp, and gave notice of the danger her father and companions were in; and then Arunx, the king's ſon flying with a great body of cavalry to their relief, put the aggreſſors to the rout.

Rome

73 Treachery of the Tarquins.

This notorious piece of treachery in the Tarquins gave Porſena ſtrong ſuſpicions of the badneſs of their cauſe. He therefore aſſembled the chief commanders of the Hetrurians; and having heard in their preſence the complaints of the Romans, and the juſtification of their proceedings againſt the Tarquins, he was ſo ſtruck with horror at the recital of the crimes the Tarquins were charged with, that he immediately ordered them to leave his camp; declaring, that he renounced his alliance with them, and would no longer continue the hoſpitality he had ſhown them. He then commanded the ten young virgins to be brought before him and inquired who was the firſt author and chief manager of the enterpriſe. They all kept ſilence, till Clælia herſelf, with an air of intrepidity, confeſſed, that ſhe alone was guilty, and that ſhe had encouraged the others by her advice. Upon this the king, extolling her reſolution above the bravery of Horatius and the intrepidity of Mutius, made her a preſent of a fine horſe, with ſumptuous furniture. After this he concluded a peace with the Romans, and reſtored to them all their hoſtages; declaring, that their bare word was to him a ſufficient ſecurity for the performance of the articles.

74 Porſena abandons their cauſe.

75 Concludes a peace with the Romans, and relieves them.

And now Porſena being about to return to Cluſium, gave, before his departure, a further teſtimony of his reſpect and friendſhip for the Romans. He knew that Rome was greatly diſtreſſed for want of proviſions; but being afraid to offend the inhabitants by relieving them in a direct manner, he ordered his ſoldiers to leave behind them their tents and proviſions, and to carry nothing with them but their arms. As his camp abounded with all ſorts of proviſions, Rome was hereby much relieved in her wants. The moveables and corn of the Hetrurians were ſold by auction to private perſons; and on this occaſion the Romans took up the cuſtom of making a proclamation by an herald, whenever any effects belonging to the public were to be ſold, in the following words, *Theſe are Porſena's goods*. The deſign of this was to preſerve the memory of that prince's kindneſs. The ſenate, not ſatisfied with this, erected a ſtatue of the king near the comitium, and ſent an embaſſy

Rome. embaſſy to him with a preſent of a throne adorned with ivory, a ſceptre, a crown of gold, and a triumphal robe. Rome.

Thus the Romans eſcaped the greateſt danger they had hitherto been in. However, they did not yet enjoy tranquility. The Sabines revolted, and continued the war for ſome time with great obſtinacy: but being defeated in ſeveral engagements, they were at laſt obliged to ſubmit: and ſcarce was this war ended, when another began with the Latins, who now declared for king Tarquin. Before they began this war, however, an embaſſy was ſent to Rome, the purport of which was, that the Romans ſhould raiſe the ſiege of Fidenæ which had revolted, and receive the Tarquins; who, on their part, ſhould grant a general amneſty. The ambaſſadors were to allow the Romans a whole year to conſider on theſe overtures; and to threaten them with a war in caſe they refuſed to comply with them. The chief view of Tarquin and his partizans in promoting this embaſſy was, to lay hold of that oportunity to raiſe a ſedition in the city. To the ambaſſadors, therefore, of the Latins, he joined ſome of his own emiſſaries, who, on their arrival in the city, found two ſorts of people diſpoſed to enter into their meaſures; to wit, the ſlaves, and the meaner citizens. 76 The Latins declare for Tarquin. 77 A dangerous conſpiracy againſt the ſtate,

The ſlaves had formed a conſpiracy the year before to ſeize the Capitol, and ſet fire to the city in ſeveral quarters at the ſame time. But the plot being diſcovered, thoſe who were concerned in it had been all crucified, and this execution had highly provoked the whole body of ſlaves. As to the meaner citizens, who were for the moſt part overwhelmed with debt, and cruelly uſed by their creditors, they were well apprized that there could happen no change in the government but to their advantage. Theſe were the conſpirators pitched upon, and to them were given the following parts to act: the citizens were to make themſelves maſters of the ramparts and gates of the city, at an appointed hour of the night; and then to raiſe a great ſhout as a ſignal to the ſlaves, who had engaged to maſſacre their maſters at the ſame inſtant: the gates of the city were then to be opened to the Tarquins, who were to enter Rome while it was yet reeking with the blood of the ſenators. The conſpiracy was ripe for execution, when Tarquin's principal agent, Publius and Marcus, both of his own name and family, being terrified with frightful dreams, had not courage enough to proceed in their deſign till they had conſulted a diviner. However, they did not diſcover to him the conſpiracy; but only aſked him in general terms, what ſucceſs they might expect in a project they had formed? The ſoothſayer, without the leaſt heſitation, returned the following anſwer: *Your project will end in your ruin. Diſburden yourſelves of ſo heavy a load.* Hereupon the Tarquins, fearing leſt ſome of the other conſpirators ſhould be before hand with them in informing, went immediately to S. Sulpitius, the only conſul then at Rome, and diſcovered the whole matter to him. The conſul greatly commended them, and detained them in his houſe, till, by private inquiries, he was aſſured of the truth of their depoſitions. Then he aſſembled the ſenate, and gave the Latin ambaſſadors their audience of leave, with an anſwer to their propoſals; which was, that the Romans would neither receive the Tarquins, nor raiſe the ſiege of Fidenæ, but [illegible] 78 How diſcovered.

to a man ready to ſacrifice their lives in defence of their liberties, and willing to undergo any dangers rather than ſubmit to the government of a tyrant.

The ambaſſadors being diſmiſſed with this anſwer, and conducted out of the city, Sulpitius laid open to the fathers the dreadful conſpiracy. It ſtruck them with horror: but they were all at a loſs in what manner they ſhould apprehend and puniſh the guilty; ſince, by the law of Poplicola, there was an appeal to the people in all capital caſes; and the two witneſſes, who were ſtrangers, might be excepted againſt by Roman citizens. In this perplexity they left the whole conduct of this critical affair to Sulpitius; who took a method which he thought would equally ſerve to prove the guilt and puniſh the guilty. He engaged the two informers to aſſemble the conſpirators, and to appoint a rendezvous at midnight in the forum, as if they deſigned to take the laſt meaſures for the execution of the enterpriſe. In the mean time he uſed all proper means to ſecure the city, and ordered the Roman knights to hold themſelves ready, in the houſes adjoining to the forum, to execute the orders they ſhould receive. The conſpirators met at the time and place appointed by the two Tarquins; and the knights, upon a ſignal agreed on beforehand, inveſted the forum, and blocked up all the avenues to it ſo cloſely, that it was impoſſible for any of the conſpirators to make their eſcape. As ſoon as it was light, the two conſuls appeared with a ſtrong guard on the tribunal; for Sulpitius had ſent to his colleague Manius, who was beſieging Fidenæ, deſiring him to haſten to the city with a choſen body of troops. The people were convened by curiæ, and acquainted with the conſpiracy which had been formed againſt the common liberty. The accuſed were allowed to make their defence, if they had any thing to offer againſt the evidence: but not one of them denying the fact, the conſuls repaired to the ſenate, where ſentence of death was pronounced againſt the conſpirators, in caſe the people approved it.

This decree of the ſenate being read to and approved by the aſſembly, the people were ordered to retire, and the conſpirators were delivered up to the ſoldiers, who put them all to the ſword. The peace of Rome was thought ſufficiently ſecured by this ſtroke of ſeverity; and therefore, though all the conſpirators were not puniſhed with death, it was judged proper not to make any further inquiries. The two informers were rewarded with all the privileges of Roman citizens, 100,000 aſes, and 20 acres of land. Three feſtival-days were appointed for expiations, ſacrifices, and public games, by the way of thankſgiving to the gods. But the general joy was diſturbed by a melancholy accident: as the people were conducting Manius Tullius the conſul from the circus to his houſe, he fell from his chariot, and died three days after. 79 The conſpirators puniſhed.

The city of Fidenæ was not yet reduced: it held out during the following conſulſhip of T. Albutius and P. Veturius; but was taken the next year by T. Lartius, who, together with Q. Clelius, was raiſed to the conſular dignity. The Latins, enraged at the loſs of this town, began to complain of their leading men; which opportunity Tarquin and Mamilius improved ſo far, as to make all the Latin cities, 24 in number, enter into an alliance againſt Rome, and to bind themſelves by oath never to violate their engagements. The Latins

Rome. tins made vaſt preparations, as did likewiſe the Romans; but the latter could procure no aſſiſtance from their neighbours. As the Latin nation was much ſuperior to them in ſtrength, they ſent deputies to ſolicit ſuccours from the ſeveral ſtates with which they were ſurrounded: but their negociations proved every where unſucceſsful; and, what was worſe than all, the republic had rebellious ſons in her own boſom, who refuſed to lend their aid in defence of their country. The poorer

80 Diſturbances at Rome. ſort of people, and the debtors, refuſed to take the military oaths, or to ſerve; alleging their poverty, and the fruitleſs hazards they ran in fighting for the defence of a city, where they were oppreſſed and enſlaved by their creditors. This ſpirit of mutiny ſpread among the inferior claſſes, moſt of them refuſing to liſt themſelves, unleſs their debts were all remitted by a decree of the ſenate; nay, they began to talk of leaving the city, and ſettling elſewhere.

The ſenate, apprehending a general inſurrection, aſſembled to deliberate on the means of quieting thoſe domeſtic troubles. Some were for a free remiſſion of all debts, as the ſafeſt expedient at that juncture; others urged the dangerous conſequences of ſuch a condeſcenſion, adviſing them to liſt ſuch only as were willing to ſerve, not doubting but thoſe who refuſed their aſſiſtance would offer it of their own accord when it was no longer deſired. Several other expedients were propoſed: but at length this prevailed; to wit, that all actions for debts ſhould be ſuſpended till the concluſion of the war with the Latins. But this the indigent debtors thought only a ſuſpenſion of their miſery; and therefore it had not the intended effect on the minds of the unruly multitude. The ſenate might indeed have proſecuted the ringleaders of the ſedition; but the law of Poplicolo, called the *Valerian law*, which allowed appeals to the aſſembly of the people, was a protection for the ſeditious, who were ſure of being acquitted by the accomplices of their rebellion. The ſenate, therefore, to elude the effect of a privilege that put ſuch a reſtraint upon their power, reſolved to create one ſupreme magiſtrate, who, with the title of *dictator*, ſhould have an abſolute power for a time: but as this could not be done without ſtriking at the law of Poplicola, and transferring the power of the people in criminal cauſes to a magiſtrate ſuperior to all laws, it was neceſſary to uſe artifice, in order to obtain the conſent of the curiæ. They therefore repreſented to them in a public aſſembly, that, in ſo difficult a conjuncture, when they had their domeſtic quarrels to decide, and

81 A dictator created. at the ſame time a powerful enemy to repulſe, it would be expedient to put the commonwealth under a ſingle governor, who, ſuperior to the conſuls themſelves, ſhould be the arbiter of the laws, and as it were the father of his country; that his power ſhould have no limits: but, however, leſt he ſhould abuſe it, they ought not to truſt him with it above ſix months.

The people, not foreſeeing the conſequences of this change, agreed to it; but the greateſt difficulty was to find a man duly qualified in all reſpects for ſ great a truſt. T. Lartius, one of the conſuls, ſeemed to be of all men the moſt unexceptionable; but the ſenate, fearing to offend his colleague by an invidious preference, gave the conſuls the power of chooſing a dictator, and obliged them to name one of themſelves, not doubting but Cœlius would yield to the ſuperior talents of his colleague; nor were they diſappointed in their expectations. But Lartius, with the ſame readineſs, named Cœlius; and the only conteſt was, which of the two ſhould raiſe the other to the ſupreme authority. Each perſiſted obſtinately in remitting the dignity to his colleague, till Cœlius, ſtarting up on a ſudden, abdicated the conſulſhip, and, after the manner of an interrex, proclaimed Titus Lartius dictator, who thereupon was obliged to take upon him the government of the republic.

82 He chooſes a general of horſe. Lartius indeed took as much ſtate upon him, after he had entered upon his office, as he had ſhown modeſty in refuſing it. He began by creating, without the participation either of the ſenate or people, a general of the Roman horſe; an office which laſted only during the dictatorſhip, and which all ſubſequent dictators revived immediately after their election. Sp. Caſſius, formerly conſul, and honoured with a triumph, was the perſon he advanced to this ſecond ſtation in the republic. Lartius, having by this means ſecured the Roman knights, reſolved, in the next place, to make the people reſpect and fear him. With this view he never appeared in public, without being attended by 24 lictors, to whoſe faſces he again added the axes which Poplicola had cauſed to be taken from them. The novelty of this ſight was alone ſufficient to awe the ſeditious, and, without executions, to ſpread conſternation throughout Rome. The murmurs of the inferior claſſes being by this means ſilenced, the dictator commanded a cenſus to be taken, according to the inſtitution of King Servius. Every one, without exception, brought in his name, age, the particulars of his

83 Number of the Romans. eſtate, &c. and there appeared to be in Rome 150,700 men who were paſt the age of puberty. Out of theſe the dictator formed four armies: the firſt he commanded himſelf; the ſecond he gave to Cœlius his late colleague; the third to Sp. Caſſius his general of the horſe; and the fourth he left in Rome, under the command of his brother Sp. Lartius, who was to guard the city. The Latins not being ſo forward in their preparations as was expected, all their hoſtilities againſt Rome this campaign amounted to no more than the ſending a detachment into the Roman territory to lay it waſte. The dictator gained ſome advantage over that party; and the great humanity with which he treated the priſoners and wounded, diſpoſed the Latins to liſten the more readily to the overtures which he at the ſame time made them for a ſuſpenſion of hoſtilities. At length a truce was agreed on for a year; and then Lartius, ſeeing the republic reſtored to its former tranquillity, reſigned the dictatorſhip, though the time appointed for its duration was not yet expired.

The following conſulſhip of Sempronius Atratinus and Minutius Angurinus, produced nothing memorable. But the next year the truce expired, when Aulus Poſthumius and T. Virginius took poſſeſſion of the conſulſhip. Both Romans and Latins were buſied in making the neceſſary preparations for war. The nobility of Latium, who were for the moſt part in the intereſt of the Tarquins, having found means to exclude the citizens from the Latin diets, carried all before them in thoſe aſſemblies: whereupon many of the citizens removed with their families to Rome, where they were well received. The Latins being bent upon war, the ſenate, notwithſtanding the perfect har-

Rome. mony that reigned between them and the people, thought it expedient to create a dictator. The two conſuls were therefore impowered to name one of themſelves to that dignity; whereupon Virginius readily yielded it to his colleague Poſthumius, as the more able commander. The new dictator, having created Æbutius Elva his general of the horſe, and divided his army into four bodies, left one of them, under the command of Sempronius, to guard the city; and with the other three, commanded by himſelf, Virginius, and Æbutius, marched out againſt the Latins, who, with an army of 40,000 foot and 3000 horſe, under the command of Sextus Tarquinius, Titus Tarquinius, and Mamilius, had already made themſelves maſters of Corbio, a ſtrong-hold belonging to the republic, and put the garriſon to the ſword. Poſthumius encamped in the night on a ſteep hill near the lake Regillus, and Virginius on another hill over-againſt him. Æbutius was ordered to march ſilently in the night, with the cavalry and light-armed infantry, to take poſſeſſion of a third hill upon the road, by which proviſions muſt be brought to the Latins.

Battle of Regillus.

Before Æbutius had fortified his new camp, he was vigorouſly attacked by Lucius Tarquinius, whom he repulſed three times with great loſs, the dictator having ſent him a timely reinforcement. After this, Æbutius intercepted two couriers ſent by the Volſci to the Latin generals, and, by letters found upon them, diſcovered, that a conſiderable army of the Volſci and Hernici were to join the Latin forces in three days. Upon this intelligence, Poſthumius drew his three bodies of troops together, which amounted in all to no more than 24,000 foot and 1000 horſe, with a deſign to engage the enemy before the arrival of the ſuccours they expected. Accordingly he encouraged his men, and, with his army in battle-array, advanced to the place where the enemy was encamped. The Latins, who were much ſuperior to the Romans in numbers, and beſides began to want proviſions, did not decline the engagement. Titus Tarquinius, at the head of the Roman exiles and deſerters, was in the centre, Mamilius in the right wing, and Sextus Tarquinius in the left. In the Roman army the dictator commanded in the centre, Æbutius in the left wing, and Virginus in the right.

The firſt body which advanced was that of the dictator; and, as ſoon as it began to march, T. Tarquinius, ſingling out the dictator, ran full ſpeed againſt him. The dictator did not decline the encounter, but, flying at his adverſary, wounded him with a javelin in the right ſide. Upon this, the firſt line of the Latins advanced to cover their general; but he being carried out of the field, they made but a faint reſiſtance when charged by the troops of the dictator. They were deſtitute of a leader; and therefore began to retire, when Sextus Tarquinius, taking the place of his brother, brought them back to the charge, and renewed the fight with ſuch vigour, that the victory in the centre was ſtill doubtful. On the ſide of Mamilius and Æbutius, both parties, encouraged by the example of their leaders, fought with incredible bravery and reſolution. After a long and bloody conteſt, the two generals agreed to determine the doubtful victory by a ſingle combat. Accordingly the champions puſhed on their horſes againſt each other. Æbutius with his lance wounded Mamilius in the breaſt; and Mamilius with his ſword Æbutius in the right arm. Neither of the wounds were mortal; but, both generals falling from their horſes put an end to the combat. Marcus Valerius, the brother of Poplicola, ſupplying the place of Æbutius, endeavoured, at the head of the Roman horſe, to break the enemy's battalions; but was repulſed by the cavalry of the Roman royalids. At the ſame time Mamilius appeared again in the van, with a conſiderable body of horſe and light-armed infantry. Valerius, with the aſſiſtance of his two nephews, the ſons of Poplicola, and a choſen troop of volunteers, attempted to break through the Latin battalions, in order to engage Mamilius; but, being ſurrounded by the Roman exiles, he received a mortal wound in his ſide, fell from his horſe, and died. The dead body was carried off by the two ſons of Poplicola, in ſpite of the utmoſt efforts of the exiles, and delivered to Valerius's ſervants, who conveyed it to the Roman camp; but the young heroes being afterwards inveſted on all ſides, and overpowered by numbers, were both killed on the ſpot. Upon their death, the left wing of the Romans began to give ground, but were ſoon brought back by Poſthumius; who, with a body of Roman knights, flying to their aſſiſtance, charged the royalids with ſuch fury, that they were, after an obſtinate reſiſtance obliged to give way, and retire in the utmoſt confuſion. In the mean time Titus Horminius, one of the dictator's lieutenants, having rallied thoſe who had fled, fell upon ſome cloſe battalions of the enemy's right wing, which ſtill kept their ground under the command of Mamilius, killed him with his own hand, and put that body to flight. But while he was buſy in ſtripping the body of his enemy, he received himſelf a wound, of which he died ſoon after.

Rome.

Sextus Tarquinius in the mean time maintained the fight with great bravery, at the head of the left wing, againſt the conſul Virginius; and had even broke thro' the right wing of the Roman army, when the dictator attacked him unexpectedly with his victorious ſquadrons. Then Sextus, having loſt at once all hopes of victory, threw himſelf, like one in deſpair, into the midſt of the Roman knights, and there ſunk under a multitude of wounds, after he had diſtinguiſhed himſelf in a moſt eminent manner. The death of the three generals was followed by the entire defeat of the Latin army. Their camp was taken and plundered, and moſt of their troops cut in pieces; for, of the 43,000 men who came into the field, ſcarce 10,000 returned home. The next morning the Volſci and Hernici came, according to their agreement, to aſſiſt the Latins; but finding, upon their arrival, how matters had gone, ſome of them were for falling upon the Romans before they could recover from the fatigue of the preceding day; but others thought it more ſafe to ſend ambaſſadors to the dictator, to congratulate him on his victory, and aſſure him that they had left their own country with no other deſign than to aſſiſt Rome in ſo dangerous a war. Poſthumius, by producing their couriers and letters, gave them to underſtand that he was well appriſed of their deſigns and treacherous proceedings. However, out of a regard to the law of nations, he ſent them back unhurt, with a challenge to their generals to fight the next day; but the Volſci, and their confederates, not caring to engage a victorious army, decamped

85 The Latins entirely defeated, and their camp taken.

Rome. camped in the night, and returned to their reſpective countries before break of day.

86 The whole nation ſubmits. The Latins having now no remedy but an entire ſubmiſſion, ſent ambaſſadors to ſolicit a peace at Rome, yielding themſelves abſolutely to the judgment of the ſenate. As Rome had long ſince made it a maxim to ſpare the nations that ſubmitted, the motion of Titus Lartius, the late dictator, prevailed; and the ancient treaties with the Latins were renewed, on condition, however, that they ſhould reſtore the priſoners they had taken, deliver up the deſerters, and drive the Roman exiles out of Latium. Thus ended the laſt war which the Romans waged with their neigbours on account of their baniſhed king; who, being now abandoned by the Latins, Hetrurians, and Sabines, retired into Campania, to Ariſtodemus tyrant of Cumæ, and there died, in the 90th year of his age and 14th of his exile.

87 Tarquin dies.

The Romans were no ſooner freed from theſe dangerous wars, than they began to oppreſs one another; and thoſe domeſtic feuds took place which continued more or leſs during the whole time of the republic. The firſt diſturbances were occaſioned by the oppreſſion of the plebeians who were debtors to the patricians. The ſenate, who were at the head of the patricians, choſe to the conſulate one Appius Claudius, who violently oppoſed the pretenſions of the plebeians; but gave him for his colleague one P. Servilius, who was of a quite contrary opinion and diſpoſition. The conſequence of this was, that the conſuls diſagreed; the ſenate did not know what to determine, and the people were ready to revolt. In the midſt of theſe diſturbances, an army of the Volſci advanced towards Rome; the people refuſed to ſerve; and had not Servilius procured ſome troops who ſerved out of a perſonal affection to himſelf, the city would have been in great danger.

88 New diſturbances at Rome.

But though the Volſci were for this time driven back, they had no intention of dropping their deſigns; they engaged in an alliance with them the Hernici and Sabines. In the mean time, the diſputes at Rome continued with as much violence as ever. Nay, though they were expreſsly told that the Volſcian army was on its way to beſiege the city, the plebeians abſolutely refuſed to march againſt them; ſaying that it was the ſame thing whether they were chained by their own countrymen or by the enemy. In this extremity Servilius promiſed, that when the enemy were repulſed the ſenate would remit all the debts of the plebeians. This having engaged them to ſerve, the conſul marched out at their head, defeated the enemy in a pitched battle, and took their capital, giving it up to be plundered by his ſoldiers, without reſerving any part for the public treaſury.

Whatever might have been the reaſons of Servilius for this ſtep, it furniſhed Appius with a pretence for refuſing him a triumph, as a man of a ſeditious diſpoſition who aimed at popularity by an exceſſive indulgence and profuſeneſs to his ſoldiers. Servilius, incenſed at this injuſtice, and encouraged by the acclamations of the people, decreed himſelf a triumph in ſpite of Appius and the ſenate. After this he marched againſt the Aurunci, who had entered Latium; and, in conjunction with Poſthumius Regillens, he utterly defeated them, and obliged them to retire into their own country. But neither the ſervices of the general nor his ſoldiers could mollify the ſenate and patrician party. Rome. Appius even doubled the ſeverity of his judgments, and impriſoned all thoſe who had been ſet at liberty during the war. The priſoners cried for relief to Servilius; but he could not obtain the accompliſhment of thoſe promiſes which the ſenate never had meant to perform; neither did he chooſe to quarrel openly with the whole patrician body; ſo that, ſtriving to preſerve the friendſhip of both parties, he incurred the hatred of the one and the contempt of the other. Perceiving therefore that he had loſt all his intereſt with the plebeians, he joined with the patricians againſt them; but the plebeians ruſhing tumultuouſly into the forum, made ſuch a noiſe, that no ſentence pronounced by the judges could be heard, and the utmoſt confuſion prevailed through the whole city. Several propoſals were made to accommodate matters; but through the obſtinacy of Appius and the majority of the ſenators, they all came to nothing. In the mean time it was neceſſary to raiſe an army againſt the Sabines, who had invaded the territories of the republic; but the people refuſed to ſerve. Manius Valerius, however, brother to the celebrated Poplicola, once more prevailed upon them to march out againſt the common enemy; having previouſly obtained aſſurance from the ſenate that their grievances ſhould be redreſſed. But no ſooner had victory declared in favour of the Romans, than the ſenate, apprehending that the ſoldiers at their return would challenge Valerius, who had been nominated dictator, for the performance of their promiſes, deſired him and the two conſuls to detain them ſtill in the field, under pretence that the war was not quite finiſhed. The conſuls obeyed; but the dictator, whoſe authority did not depend on the ſenate, diſbanded his army, and declared his ſoldiers free from the oath which they had taken; and as a further proof of his attachment to the plebeians, he choſe out of that order 400, whom he inveſted with the dignity of knights. After this he claimed the accompliſhment of the promiſes made by the ſenate; but inſtead of performing them, he had the mortification to hear himſelf loaded with reproaches; on which he reſigned his office as dictator, and acquainted the people with his inability to fulfil his engagements to them. No ſooner were theſe tranſactions known in the army, than the ſoldiers, to a man, deſerted the conſuls and other officers, and retired to a hill called afterwards *Mons Sacer*, three miles from Rome, where they continued to obſerve an exact diſcipline, offering no ſort of violence whatever. The ſenate, after taking proper meaſures for the defence of the city, ſent a deputation to the malecontents; but it was anſwered with contempt. In ſhort, all things tended to a civil war, when at laſt matters were compromiſed by the inſtitution of tribunes of the people, who had power to prevent the paſſing of any law that might be prejudicial to the people, and whoſe perſons were declared ſacred, inſomuch that whoever offered the leaſt violence to the perſon of a tribune was declared accurſed, his effects were to be conſecrated to Ceres, and he himſelf might be killed with impunity; and all the Romans were to engage themſelves, in their own name and that of their poſterity, never to repeal this law. The people, after theſe regulations, erected an altar to Jupiter the Terrible, on the top of the hill where their camp had ſtood; and when they had offer-

89 The ſoldiers revolt, but all the troubles are ended by creating tribunes of the people.

Rome. ed ſacrifices to the god, and conſecrated the place of their retreat, they returned to Rome, led by their new magiſtrates and the deputies of the ſenate.

Thus the Roman conſtitution, which had originally been monarchic, and from thence had paſſed into an ariſtocracy, began now to verge towards a democracy. The tribunes immediately after their election obtained permiſſion from the ſenate to elect two perſons as their miniſters or aſſiſtants, who ſhould eaſe them a little in the great multiplicity of their affairs. Theſe were called *plebeian ædiles*; and afterwards came to have the inſpection of the public baths, aqueducts, with many other offices originally belonging to the conſuls, after which they were called ſimply *ædiles*.

All oppoſition to the making of regular levies being now at an end, the conſul Cominius led an army againſt the Volſci. He defeated them in battle, and took from them Longula and Poluſca; after which he beſieged Corioli, a city ſtrongly fortified, and which might be called their capital. He carried this place, and gained a victory over the Antiates, the ſame day; but Caius Marcius, an eminent patrician, had all the glory of both actions. The troops detached by the conſul to ſcale the walls of Corioli being repulſed in their firſt aſſault, Marcius rallied the runaways, led them on afreſh to the charge, drove back the enemy within their walls, and, entering the city with them, made himſelf maſter of it. This exploit atchieved, he with all expedition put himſelf in the foremoſt ranks of the conſul's main army, that was juſt going to engage with the Antiates, who were come to the relief of the place; and there he behaved with equal bravery, and had equal ſucceſs.

90 Bravery of Caius Marcius Coriolanus.

The next day the conſul, having erected his tribunal before his tent, called the ſoldiers together. His whole ſpeech to them was little more than a panegyric upon Marcius. He put a crown upon his head; aſſigned him a tenth part of all the ſpoil; and, in the name of the republic, made him a preſent of a fine horſe with ſtately furniture, giving him leave at the ſame time to chooſe out any ten of the priſoners for himſelf; and laſtly, he allotted him as much money as he could carry away. Of all theſe offers Marcius accepted only the horſe, and one captive of the ten, an old friend of his family, that he might give him his liberty. To add to the glory of the brave warrior, the conſul beſtowed on him the ſurname of *Coriolanus*, transferring thereby from himſelf to Marcius all the honour of the conqueſt of Corioli. Cominius, at his return to Rome, diſbanded his army; and war was ſucceeded by works of religion, public games, and treaties of peace. A cenſus and a luſtrum cloſed the events of this memorable conſulſhip. There appeared to be in Rome at this time no more than 110,000 men fit to bear arms; a number by many thouſands leſs than at the laſt enrollment. Doubtleſs great numbers had run away to avoid being ſlaves to their creditors.

91 Decrease of the power of the Romans.

Under the following adminiſtration of T. Geganius and P. Minucius, Rome was terribly afflicted by a famine, occaſioned chiefly by the neglect of ploughing and ſowing during the late troubles; for the ſedition had happened after the autumnal equinox, about ſowing-time, and the accommodation was not made till juſt before the winter ſolſtice. The ſenate diſpatched agents into Hetruria, Campania, the country of the Volſci, and even into Sicily, to buy corn. Thoſe who embarked for Sicily met with a tempeſt which retarded their arrival at Syracuſe; where they were conſtrained to paſs the winter. At Cumæ, the tyrant Ariſtodemus ſeized the money brought by the commiſſaries; and they themſelves with difficulty ſaved their lives by flight. The Volſci, far from being diſpoſed to ſuccour the Romans, would have marched againſt them, if a ſudden and moſt deſtructive peſtilence had not defeated their purpoſe. In Hetruria alone the Roman commiſſaries met with ſucceſs. They ſent a conſiderable quantity of grain from thence to Rome in barks: but this was in a ſhort time conſumed, and the miſery became exceſſive: the people were reduced to eat any thing they could get; and nature in ſo great extremity loathed nothing.

92 A famine in the city.

Rome.

During this diſtreſs a deputation came from Velitræ a Volſcian city, where the Romans had formerly planted a colony, repreſenting that nine parts in ten of its inhabitants had been ſwept away by a plague, and praying the Romans to ſend a new colony to re-people it. The conſcript fathers without much heſitation granted the requeſt, preſſed the departure of the colony, and without delay named three leaders to conduct it.

93 A colony ſent to Velitræ.

The people at firſt were very well pleaſed with the propoſal, as it gave them a proſpect of relief in their hunger: but when they reflected on the terrible havoc the plague had made among the old inhabitants of Velitræ, they began to fear that the place might be ſtill infected; and this apprehenſion became ſo univerſal, that not one of them would conſent to go thither. Nevertheleſs the ſenate at length publiſhed a decree that all the citizens ſhould draw lots; and that thoſe to whoſe lot it fell to be of the colony ſhould inſtantly march for Velitræ, or ſuffer the ſevereſt puniſhments for their diſobedience: fear and hunger made the people comply; and the fathers, a few days after, ſent away a ſecond colony to Norba, a conſiderable city of Latium. But the patricians were diſappointed as to the benefit they expected from theſe meaſures. The plebeians who remained in Rome being more and more preſſed by hunger and want, grew daily more angry with the ſenate. At firſt they aſſembled in ſmall companies to vent their wrath in abuſive complaints; and at length, in one great body, ruſhed all together into the forum, calling out upon their tribunes for ſuccour.

94 Diſturbances raiſed by the tribunes.

The tribunes made it their buſineſs to heighten the general diſcontent. Having convened the people, Spurius Icilius, chief of the college of tribunes, inveighed moſt bitterly againſt the ſenate; and when he had ended his harangue, exhorted others to ſpeak freely their thoughts; particularly, and by name, calling upon Brutus and Sicinius, the ringleaders of the former ſedition, and now ædiles. Theſe men, far from attempting to extinguiſh the fire, added freſh fuel to it: And the more to inflame the ſpirits of the multitude, they enumerated all the paſt inſults which the people had ſuffered from the nobles. Brutus concluded his harangue with loudly threatening, that if the plebeians would follow his advice, he would ſoon oblige thoſe men who had cauſed the preſent calamity to find a remedy for it; after which the aſſembly was diſmiſſed.

The next day, the conſuls, greatly alarmed at this commotion, and apprehending from the menaces of Brutus ſome very miſchievous event, thought it advi-

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Rome. fable to convene the ſenators, that they might conſider of the beſt means to avert the impending evil. The fathers could not agree in opinion. Some were for employing ſoft words and fair promiſes to quiet and gain over the moſt turbulent. But Appius's advice prevailed: which was, that the conſuls ſhould call the people together, aſſure them that the patricians had not brought upon them the miſeries they ſuffered, and promiſe, on the part of the ſenate, all poſſible care to provide for their neceſſities; but at the ſame time ſhould reprove the diſturbers of the public peace, and threaten them with the ſevereſt puniſhments if they did not amend their behaviour.

When the conſuls, towards the cloſe of the day, having aſſembled the people, would have ſignified to them the diſpoſition and intention of the ſenate, they were interrupted by the tribunes. A diſpute enſued, in which no order or decency was obſerved on either ſide. Several ſpeaking at the ſame time, and with great vociferation, no one could be well underſtood by the audience. The conſuls judged, that being the ſuperior magiſtrates, their authority extended to all aſſemblies of the citizens. On the other ſide, it was pretended, that the aſſemblies of the people were the province of the tribunes, as the ſenate was that of the conſuls.

The diſpute grew warm, and both parties were ready to come to blows; when Brutus having put ſome queſtions to the conſuls, ended it for that time. Next day
95 The power of the people increaſes. he propoſed a law which was carried, that no perſon whatever ſhould interupt a tribune when ſpeaking in an aſſembly of the people; by which means the influence and power of the popular party was conſiderably increaſed, and the tribunes became formidable opponents to the conſuls and patricians. An opportunity ſoon offered for both parties to try their ſtrength. A great fleet of ſhips laden with corn from Sicily, a great part of which was a preſent from Gelon the king of that country to the Romans, and the reſt purchaſed by the ſenate with the public money, raiſed their ſpirits once more.

But Coriolanus incurred their reſentment, by inſiſting that it ſhould not be diſtributed till the grievances of the ſenate were removed. For this, the tribunes ſummoned him to a trial before the people, under pretence that he aſpired at the ſovereignty.

96 Coriolanus baniſhed. When the appointed day was come, all perſons were filled with the greateſt expectations, and a vaſt concourſe from the adjacent country aſſembled and filled up the forum. Coriolanus, upon this, preſented himſelf before the people with a degree of intrepidity that merited better fortune. His graceful perſon, his perſuaſive eloquence, the cries of thoſe whom he had ſaved from the enemy, inclined the auditors to relent. But being confounded with a new charge which he did not expect, of having embezzled the plunder of Antium, the Tribunes immediately took the votes, and Coriolanus was condemned to perpetual exile.

This ſentence againſt their braveſt defender ſtruck the whole body of the ſenate with ſorrow, conſternation, and regret. Coriolanus alone, in the midſt of the tumult, ſeemed an unconcerned ſpectator. He returned home, followed by the lamentations of hundreds of the moſt reſpectable ſenators and citizens of Rome, to take a laſting leave of his wife, his children and his mother Veturia. Thus recommending his little children to their care, he left the city, without followers or fortune, to take refuge with Tullus Attius, a man of great power among the Volſcians, who took him under his protection, and eſpouſed his quarrel. Rome. He leaves the city and joins the Volſci.

The firſt thing to be done, was to induce the Volſci to break the league which had been made with Rome; and for this purpoſe Tullus ſent many of his citizens thither, in order to ſee ſome games at that time celebrating; but at the ſame time gave the ſenate private information, that the ſtrangers had dangerous intentions of burning the city. This had the deſired effect; the ſenate iſſued an order that all ſtrangers, whoever they were, ſhould depart from Rome before ſunſet. This order Tullus repreſented to his countrymen as an infraction of the treaty, and procured an embaſſy to Rome, complaining of the breach, and demanding back all the territories belonging to the Volſcians, of which they had been violently diſpoſſeſſed; declaring war in caſe of a refuſal: but this meſſage was treated by the ſenate with contempt.

War being thus declared on both ſides, Coriolanus and Tullus were made generals of the Volſcians; and accordingly invaded the Roman territories, ravaging and laying waſte all ſuch lands as belonged to the plebeians, but letting thoſe of the ſenators remain untouched. In the mean time, the levies went on very ſlowly at Rome; the two conſuls, who were re-elected by the people, ſeemed but little ſkilled in war, and even feared to encounter a general whom they knew to be their ſuperior in the field. The allies alſo ſhowed their fears, and ſlowly brought in their ſuccours; ſo that Coriolanus continued to take their towns one after the other. Fortune followed him in every expedition; and he was now ſo famous for his victories, that the Volſci left their towns defenceleſs to follow him into the field. The very ſoldiers of his colleague's army came over to him, and would acknowledge no other general. Thus finding himſelf unoppoſed in the field, and at the head of a numerous army, he at length inveſted the city of Rome itſelf, fully reſolved to beſiege it. It was then that the ſenate and the people unanimouſly agreed to ſend deputies to him, with propoſals of reſtoration, in caſe he ſhould draw off his army. Coriolanus received their propoſals at the head of his principal officers, and, with the ſternneſs of a general that was to give the law, refuſed their offers.

98 Gains great advantages over the Romans.

99 Inveſts the city.

Another embaſſy was now ſent forth, conjuring him not to exact from his native city aught but what became Romans to grant. Coriolanus, however, ſtill perſiſted in his former demands, and granted them but three days in which to finiſh their deliberations. In this exigence, all that was left was another deputation ſtill more ſolemn than either of the former, compoſed of the pontiffs, the prieſts, and the augurs. Theſe, cloathed in their habits of ceremony, and with a grave and mournful deportment, iſſued from the city, and entered the camp of the conqueror: but all in vain, they found him ſevere and inflexible as before.

When the people ſaw them return ineffectually, they began to give up the commonwealth as loſt. Their temples were filled with old men, with women and children, who, proſtrate at their altars, put up their ardent prayers for the preſervation of their country. Nothing was to be heard but anguiſh and lamentation, nothing to be ſeen but ſcenes of affright and diſtreſs. At length

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it was suggested to them, that what could not be effected by the intercession of the senate or the adjuration of the priests, might be brought about by the tears of his wife, or the commands of his mother. This deputation seemed to be relished by all; and even the senate itself gave it the sanction of their authority. Veturia, the mother of Coriolanus, at first made some hesitation to undertake so pious a work: however, she at last undertook the embassy, and set forward from the city, accompanied by many of the principal matrons of Rome, with Volumnia his wife, and his two children. Coriolanus, who at a distance discovered this mournful train of females, was resolved to give them a denial, and called his officers round him to be witness of his resolution; but, when told that his mother and his wife were among the number, he instantly came down from his tribunal to meet and embrace them. At first, the women's tears and embraces took away the power of words; and the rough soldier himself, hard as he was, could not refrain from sharing in their distress. Coriolanus now seemed much agitated by contending passions; while his mother, who saw him moved, seconded her words by the most persuasive eloquence, her tears: his wife and children hung round him, intreating for protection and pity; while the fair train, her companions, added their lamentations, and deplored their own and their country's distress. Coriolanus for a moment was silent, feeling the strong conflict between honour and inclination: at length, as if rouzed from his dream, he flew to take up his mother, who had fallen at his feet, crying out, "O my mother, thou hast saved Rome, but lost thy son." He accordingly gave orders to draw off the army, pretending to the officers that the city was too strong to be taken. Tullus, who had long envied his glory, was not remiss in aggravating the lenity of his conduct to his countrymen. Upon their return, Coriolanus was slain in an insurrection of the people, and afterwards honourably buried, with late and ineffectual repentance.

The year following, the two consuls of the former year, Manlius and Fabius, were cited by the tribunes to appear before the people. The Agrarian law, which had been proposed some time before, for equally dividing the lands of the commonwealth among the people, was the object invariably pursued, and they were accused of having made unjustifiable delays in putting it off.

It seems the Agrarian law was a grant the senate could not think of giving up to the people. The consuls, therefore, made many delays and excuses, till at length they were once more obliged to have recourse to a dictator; and they fixed upon Quintus Cincinnatus, a man who had for some time given up all views of ambition, and retired to his little farm, where the deputies of the senate found him holding the plough, and clothed in the mean attire of a labouring husbandman. He appeared but little elevated with the addresses of ceremony and the pompous fasces they brought him; and, upon declaring to him the senate's pleasure, he testified rather a reluctance that his aid should be wanted. However, he departed for the city, where both parties were strongly enflamed against each other: but he was resolved to side with neither; only, by a strict attention to the interests of his country, instead of gaining the applauses of faction, to obtain the esteem of all. Thus, by threats and well-timed, submission, he prevailed upon the tribunes to put off their law for a time, and carried himself so as to be a terror to the multitude whenever they refused to enlist; and their greatest encourager whenever their submission deserved it. Thus, having restored that tranquillity to the people which he so much loved himself, he again gave up the splendors of ambition, to enjoy it with a greater relish in his little farm. Rome.

126 Quelled by Cincinnatus

Cincinnatus was not long retired from his office when a fresh exigence of the state once more required his assistance. The Æqui and the Volsci, who, though still worsted, still were for renewing the war, made new inroads into the territories of Rome. Minutius, one of the consuls who succeeded Cincinnatus, was sent to oppose them; but being naturally timid, and rather more afraid of being conquered than desirous of victory, his army was driven into a defile between two mountains, from which, except through the enemy, there was no egress. This, however, the Æqui had the precaution to fortify; by which the Roman army was so hemmed in on every side, that nothing remained but submission to the enemy, famine, or immediate death. Some knights, who found means of getting away privately through the enemy's camp, were the first that brought the account of this disaster to Rome. Nothing could exceed the consternation of all ranks of people when informed of it. The senate at first thought of the other consul; but not having sufficient experience of his abilities, they unanimously turned their eyes upon Cincinnatus, and resolved to make him dictator. Cincinnatus, the only person on whom Rome could now place her whole dependence, was found, as before, by the messengers of the senate, labouring in his little field with cheerful industry. He was at first astonished at the ensigns of unbounded power with which the deputies came to invest him; but still more at the approach of the principal of the senate, who came out to meet him. A dignity so unlooked for, however, had no effect upon the simplicity or the integrity of his manners: and being now possessed of absolute power, and called upon to nominate his master of the horse, he chose a poor man named *Tarquitius*, one who, like himself, despised riches when they led to dishonour. Upon entering the city, the dictator put on a serene look, and intreated all those who were able to bear arms to repair before sun-set to the Campus Martius (the place where the levies were made) with necessary arms, and provisions for five days. He put himself at the head of these; and, marching all night with great expedition, he arrived before day within sight of the enemy. Upon his approach, he ordered his soldiers to raise a loud shout, to apprize the consul's army of the relief that was at hand. The Æqui were not a little amazed when they saw themselves between two enemies; but still more when they perceived Cincinnatus making the strongest entrenchments beyond them, to prevent their escape, and inclosing them as they had inclosed the consul. To prevent this, a furious combat ensued: but the Æqui, being attacked on both sides, and unable to resist orderly, begged a cessation of arms. They offered the dictator his own terms: he gave them their lives; but obliged them, in token of servitude, to pass under the yoke, which was two spears set upright, and another across, in the form of a gallows, beneath which the

134 Who saves a consular army from destruction.

Rome. the vanquiſhed were to march. Their captains and generals he made priſoners of war, being reſerved to adorn his triumph. As for the plunder of the enemy's camp, that he gave entirely up to his own ſoldiers, without reſerving any part for himſelf, or permitting thoſe of the delivered army to have a ſhare. Thus, having reſcued a Roman army from inevitable deſtruction, having defeated a powerful enemy, having taken and fortified their city, and, ſtill more, having refuſed any part of the ſpoil, he reſigned his dictatorſhip, after having enjoyed it but 14 days. The ſenate would have enriched him; but he declined their proffers, chooſing to retire once more to his farm and his cottage, content with temperance and fame.

But this repoſe from foreign invaſion did not leſſen the tumults of the city within. The clamours for the Agrarian law ſtill continued, and ſtill more fiercely, when Sicinius Dentatus, a plebeian, advanced in years, but of an admirable perſon and military deportment, came forward, to enumerate his hardſhips and his merits. This old ſoldier made no ſcruple of extolling the various merits of his youth; but indeed his atchievements ſupported oſtentation. He had ſerved his country in the wars 40 years; he had been an officer 30, firſt a centurion, and then a tribune: he had fought 120 battles, in which, by the force of his ſingle arm, he had ſaved a multitude of lives: he had gained 14 civic, three mural, and eight golden crowns, beſides 83 chains, 60 bracelets, 18 gilt ſpears, and 23 horſe-trappings, whereof nine were for killing the enemy in ſingle combat: moreover, he had received 45 wounds, all before, and none behind. Theſe were his honours: yet, notwithſtanding all this, he had never received any ſhare of thoſe lands which were won from the enemy, but continued to drag on a life of poverty and contempt; while others were poſſeſſed of thoſe very territories which his valour had won, without any merit to deſerve them, or ever having contributed to the conqueſt. A caſe of ſo much hardſhip had a ſtrong effect upon the multitude; they unanimouſly demanded that the law might be paſſed, and that ſuch merit ſhould not go unrewarded. It was in vain that ſome of the ſenators roſe up to ſpeak againſt it; their voices were drowned by the cries of the people. When reaſon, therefore, could no longer be heard, paſſion, as uſual, ſucceeded; and the young patricians, running, furiouſly into the throng, broke the balloting urns, and diſperſed the multitude that offered to oppoſe them. For this they were ſome time after fined by the tribunes; but their reſolution, nevertheleſs, for the preſent, put off the Agrarian law.

105 Bravery of Sicinius Dentatus.

106 Violent diſturbances.

The commonwealth of Rome had now for near 60 years been fluctuating between the contending orders that compoſed it, till at length, each ſide, as if weary, were willing to reſpire a while from the mutual exertions of their claims. The citizens, now, therefore, of every rank, began to complain of the arbitrary deciſions of their magiſtrates, and wiſhed to be guided by a written body of laws, which being known might prevent wrongs as well as puniſh them. In this both the ſenate and the people concurred, as hoping that ſuch laws would put an end to the commotions that ſo long had haraſſed the ſtate. It was thereupon agreed, that ambaſſadors ſhould be ſent to the Greek cities in Italy, and to Athens, to bring home ſuch laws from thence as by experience had been found moſt equitable and uſeful. For this purpoſe, three ſenators, Poſthumius, Sulpicius, and Manlius, were fixed upon, and galleys aſſigned to convoy them, agreeable to the majeſty of the Roman people. While they were upon this commiſſion abroad, a dreadful plague depopulated the city at home, and ſupplied the interval of their abſence with other anxiety than that of wiſhes for their return. In about a year the plague ceaſed, and the ambaſſadors returned, bringing home a body of laws, collected from the moſt civilized ſtates of Greece and Italy, which being afterwards formed into ten tables, and two more being added, made that celebrated code called the *Laws of the Twelve Tables*, many fragments of which remain to this day.

107 Ambaſſadors ſent to Athens to bring new laws from thence.

Rome.

118 Decemviri elected.

The ambaſſadors were no ſooner returned, than the tribunes required that a body of men ſhould be choſen to digeſt their new laws into proper form, and to give weight to the execution of them. After long debates whether this choice ſhould not be partly made from the people as well as the patricians, it was at laſt agreed that 10 of the principal ſenators ſhould be elected, whoſe power, continuing for a year, ſhould be equal to that of kings and conſuls, and that without any appeal. The perſons choſen were Appius and Genutius, who had been elected conſuls for the enſuing year; Poſthumius, Sulpicius, and Manlius, the three ambaſſadors; Sextus and Romulus, former conſuls; with Julius Veturius, and Horatius, ſenators of the firſt conſideration.

The decemviri being now inveſted with abſolute power, agreed to take the reins of government by turns, and that each ſhould diſpenſe juſtice for a day.

Theſe magiſtrates, for the firſt year, wrought with extreme application: and their work being finiſhed, it was expected that they would be contented to give up their offices; but having known the charms of power, they were now unwilling to reſign it: they therefore pretended that ſome laws were yet wanting to complete their deſign, and intreated the ſenate for a continuence of their offices; to which that body aſſented.

109 They become abſolute.

But they ſoon threw off the maſk of moderation; and, regardleſs either of the approbation of the ſenate or the people, reſolved to continue themſelves, againſt all order, in the decemvirate. A conduct ſo notorious produced diſcontents; and theſe were as ſure to produce freſh acts of tyranny. The city was become almoſt a deſert, with reſpect to all who had any thing to loſe; and the decemvirs' rapacity was then only diſcontinued, when they wanted freſh objects to exerciſe it upon. In this ſtate of ſlavery, proſcription, and mutual diſtruſt, not one citizen was found to ſtrike for his country's freedom; theſe tyrants continued to rule without controul, being conſtantly guarded, not with their lictors alone, but a numerous crowd of dependents, clients, and even patricians, whom their vices had confederated round them.

110 Invaſion of the Æqui and Volſci.

In this gloomy ſituation of the ſtate, the Æqui and Volſci, thoſe conſtant enemies of the Romans, undertook their incurſions, reſolved to profit by the inteſtine diviſions of the people, and advanced within about 10 miles of Rome

But the decemviri, being put in poſſeſſion of all the military as well as of the civil power, divided their army

Rome.

my into three parts; whereof one continued with Appius in the city, to keep it in awe; the other two were commanded by his colleagues, and were led one againſt the Æqui, and the other againſt the Sabines. The Roman ſoldiers had now got into a method of puniſhing the generals whom they diſlked, by ſuffering themſelves to be vanquiſhed in the field. They put it in practice upon this occaſion, and ſhamefully abandoned their camp upon the approach of the enemy.

111 The Romans defeated.

Never was the news of a victory more joyfully received at Rome than the tidings of this defeat: the generals, as is always the caſe, were blamed for the treachery of their men: ſome demanded that they ſhould be depoſed; others cried out for a dictator to lead the troops to conqueſt: but among the reſt, old Sicinius Dentatus the tribune ſpoke his ſentiments with his uſual openneſs; and treating the generals with contempt, ſhowed all the faults of their diſcipline in the camp, and of their conduct in the field. Appius, in the mean time, was not remiſs in obſerving the diſpoſition of the people. Dentatus, in particular, was marked out for vengeance, and, under pretence of doing him particular honour, he was appointed legate, and put at the head of the ſupplies which were ſent from Rome to reinforce the army. The office of legate was held ſacred among the Romans, as in it were united the authority of a general, with the reverence

112 Murder of Sicinius. Dentatus.

due to the prieſthood. Dentatus, no way ſuſpecting his deſign, went to the camp with alacrity, where he was received with all the external marks of reſpect. But the generals ſoon found means of indulging their deſire of revenge. He was appointed at the head of 100 men to go and examine a more commodious place for encampment, as he had very candidly aſſured the commanders that their preſent ſituation was wrong. The ſoldiers, however, who were given as his attendants, were aſſaſſins; wretches who had long been miniſters of the vengeance of the decemviri, and who now engaged to murder him, though with all thoſe apprehenſions which his reputation, as he was called the *Roman Achilles*, might be ſuppoſed to inſpire. With theſe deſigns, they led him from the way into the hollow boſom of a retired mountain, where they began to ſet upon him from behind. Dentatus, now too late, perceived the treachery of the decemviri, and was reſolved to ſell his life as dearly as he could; he therefore put his back to a rock, and defended himſelf againſt thoſe who preſſed moſt cloſely. Though now grown old, he had ſtill the remains of his former valour, and killed no leſs than 15 of the aſſailants, and wounded 30. The aſſaſſins now therefore, terrified at his amazing bravery, ſhowered in their javelins upon him at a diſtance; all which he received in his ſhield with undaunted reſolution. The combat, though ſo unequal in numbers, was managed for ſome time with doubtful ſucceſs, till at length his aſſailants bethought themſelves of aſcending the rock againſt which he ſtood, and thus poured down ſtones upon him from above. This ſucceeded; the old ſoldier fell beneath their united efforts, after having ſhown by his death that he owed it to his fortitude, and not his fortune, that he had come off ſo many times victorious. The decemviri pretended to join in the general ſorrow for ſo brave a man, and decreed him a funeral, with the firſt military honours: but the greatneſs of their apparent diſtreſs, compared with their known hatred, only rendered them ſtill more deteſtable to the people.

Rome.

113 Tragical ſtory of Virginia.

But a tranſaction ſtill more atrocious than the former ſerved to inſpire the citizens with a reſolution to break all meaſures of obedience, and at laſt to reſtore freedom. Appius, who ſtill remained at Rome, ſitting one day on his tribunal to diſpenſe juſtice, ſaw a maiden of exquiſite beauty, and aged about 15 paſſing to one of the public ſchools, attended by a matron her nurſe. Conceiving a violent paſſion for her, he reſolved to obtain the gratification of his deſire, whatever ſhould be the conſequence, and found means to inform himſelf of her name and family. Her name was *Virginia*, the daughter of Virginius a centurion, then with the army in the field; and ſhe had been contracted to Icilius, formerly a tribune of the people, who had agreed to marry her at the end of the preſent campaign. Appius, at firſt, reſolved to break this match, and to eſpouſe her himſelf: but the laws of the Twelve Tables had forbidden the patricians to intermarry with the plebeians; and he could not infringe theſe, as he was the enacter of them. Nothing therefore remained but a criminal enjoyment; which, as he was long uſed to the indulgence of his paſſions, he reſolved to obtain. After having vainly tried to corrupt the fidelity of her nurſe, he had recourſe to another expedient, ſtill more guilty. He pitched upon one Claudius, who had long been the miniſter of his pleaſures, to aſſert the beautiful maid was his ſlave, and to refer the cauſe to his tribunal for deciſion. Claudius behaved exactly according to his inſtructions; for entering into the ſchool, where Virginia was playing among her female companions, he ſeized upon her as his property, and was going to drag her away by force, but was prevented by the people drawn together by her cries. At length, after the firſt heat of oppoſition was over, he led the weeping virgin to the tribunal of Appius, and there plauſibly expoſed his pretenſions. He aſſerted, that ſhe was born in his houſe, of a female ſlave, who ſold her to the wife of Virginius, who had been barren. That he had ſeveral credible evidences to prove the truth of what he ſaid; but that, until they could come together, it was but reaſonable the ſlave ſhould be delivered into his cuſtody, being her proper maſter. Appius ſeemed to be ſtruck with the juſtice of his claims. He obſerved, that if the reputed father himſelf were preſent, he might indeed be willing to delay the delivery of the maiden for ſome time; but that it was not lawful for him, in the preſent caſe, to detain her from her maſter. He therefore adjudged her to Claudius, as his ſlave, to be kept by him till Virginius ſhould be able to prove his paternity. This ſentence was received with loud clamours and reproaches by the multitude: the women, in particular, came round Virginia, as if willing to protect her from the judge's fury; while Icilius, her lover, boldly oppoſed the decree, and obliged Claudius to take refuge under the tribunal of the decemvir. All things now threatened an open inſurrection; when Appius, fearing the event, thought proper to ſuſpend his judgment till the arrival of Virginius, who was then about 11 miles from Rome, with the army. The day following was fixed for the trial; and, in the mean time, Appius ſent letters to the generals to confine Virginius, as his arrival in town might only ſerve to

Rome. kindle ſedition among the people. Theſe letters, however, were intercepted by the centurion's friends, who ſent him down a full relation of the deſign laid againſt the liberty and the honour of his only daughter. Virginius, upon this, pretending the death of a near relation, got permiſſion to leave the camp, and flew to Rome, inſpired with indignation and revenge. Accordingly, the next day he appeared before the tribunal, to the aſtoniſhment of Appius, leading his weeping daughter by the hand, both habited in the deepeſt mourning. Claudius, the accuſer, was alſo there, and began by making his demand. Virginius next ſpoke in turn: he repreſented that his wife had many children; that ſhe had been ſeen pregnant by numbers; that, if he had intentions of adopting a ſuppoſitious child, he would have fixed upon a boy rather than a girl; that it was notorious to all, that his wife had herſelf ſuckled her own child; and that it was ſurpriſing ſuch a claim ſhould be now revived after a 15 years diſcontinuance. While the father ſpoke this with a ſtern air, Virginia ſtood trembling by, and, with looks of perſuaſive innocence, added weight to all his remonſtrances. The people ſeemed entirely ſatisfied of the hardſhip of his caſe, till Appius, fearing what he ſaid might have dangerous effects upon the multitude, interrupted him, under a pretence of being ſufficiently inſtructed in the merits of the cauſe, and finally adjudged her to Claudius, ordering the lictors to carry her off. The lictors, in obedience to his command, ſoon drove off the throng that preſſed round the tribunal; and now they ſeized upon Virginia, and were delivering her up into the hands of Claudius, when Virginius, who found that all was over, ſeemed to acquieſce in the ſentence. He therefore mildly intreated Appius to be permitted to take a laſt farewell of one whom he had long conſidered as his child; and ſo ſatisfied, he would return to his duty with freſh alacrity. With this the decemvir complied, but upon condition that their endearments ſhould paſs in his preſence. Virginius, with the moſt poignant anguiſh, took his almoſt expiring daughter in his arms, for a while ſupported her head upon his breaſt, and wiped away the tears that rolled down her lovely viſage; and happening to be near the ſhops that ſurrounded the forum, he ſnatched up a knife that lay on the ſhambles, and buried the weapon in her breaſt; then holding it up, reeking with the blood of his daughter, "Appius (he cried) by this blood of innocence, I devote thy head to the infernal gods." Thus ſaying, with the bloody knife in his hand, and threatening deſtruction to whomſoever ſhould oppoſe him, he ran through the city, wildly calling upon the people to ſtrike for freedom, and from thence went to the camp, in order to ſpread a like flame through the army.

He no ſooner arrived at the camp, followed by a number of his friends, but he informed the army of all that was done, ſtill holding the bloody knife in his hand. He aſked their pardon, and the pardon of the gods, for having committed ſo raſh an action, but aſcribed it all to the dreadful neceſſity of the times. The army, already prediſpoſed, immediately with ſhouts echoed their approbation; and decamping, left their generals behind, to take their ſtation once more upon mount Aventine, whither they had retired about 40 years before. The other army, which had been to oppoſe the Sabines, ſeemed to feel a like reſentment, and came over in large parties to join them. Rome.

114 The decemvirate aboliſhed.

Appius, in the mean time, did all he could to quell the diſturbances in the city; but finding the tumult incapable of controul, and perceiving that his mortal enemies, Valerius and Horatius, were the moſt active in oppoſition, at firſt attempted to find ſafety by flight; nevertheleſs, being encouraged by Oppius, who was one of his colleagues, he ventured to aſſemble the ſenate, and urged the puniſhment of all deſerters. The ſenate, however, were far from giving him the relief he ſought for; they foreſaw the dangers and miſeries that threatened the ſtate, in caſe of oppoſing the incenſed army; they therefore diſpatched meſſengers to them, offering to reſtore their former mode of government. To this propoſal all the people joyfully aſſented, and the army gladly obeyed. Appius and Oppius, one of his colleagues, both died by their own hands in priſon. The other eight decemvirs went into voluntary exile; and Claudius, the pretended maſter of Virginia, was driven out after them.

115 New diſturbances.

The tribunes now grew more turbulent: they propoſed two laws; one to permit plebeians to intermarry with patricians; and the other, to permit them to be admitted to the conſulſhip alſo. The ſenators received theſe propoſals with indignation, and ſeemed reſolved to undergo the utmoſt extremities rather than ſubmit to enact them. However, finding their reſiſtance only increaſe the commotions of the ſtate, they at laſt conſented to paſs the law concerning intermarriages, hoping that this conceſſion would ſatisfy the people. But they were to be appeaſed but for a very ſhort time: for, returning to their old cuſtom of refuſing to enliſt upon the approach of an enemy, the conſuls were forced to hold a private conference with the chief of the ſenate; where, after many debates, Claudius propoſed an expedient as the moſt probable means of ſatisfying the people in the preſent conjuncture. This was, to create ſix or eight governors in the room of conſuls, whereof one half at leaſt ſhould be patricians. This project was eagerly embraced by the people; yet ſo fickle were the multitude, that though many of the plebeians ſtood, the choice wholly fell upon the patricians who offered themſelves as candidates. Theſe new magiſtrates were called *military tribunes*; they were at firſt but three, afterwards they were increaſed to four, and at length to ſix. They had the power and enſigns of conſuls; yet that power being divided among a number, each ſingly was of leſs authority. The firſt that were choſen only continued in office about three months, the augurs having found ſomething amiſs in the ceremonies of their election.

116 Military tribunes elected.

The military tribunes being depoſed, the conſuls once more came into office; and, in order to lighten the weight of buſineſs which they were obliged to ſuſtain, a new office was erected, namely, that of *cenſors*, to be choſen every fifth year. Their buſineſs was to take an eſtimate of the number and eſtates of the people, and to diſtribute them into their proper claſſes; to inſpect into the lives and manners of their fellow-citizens; to degrade ſenators for miſconduct; to diſmount knights; and to turn down plebeians from their tribes into an inferior, in caſe of miſdemeanour. The two firſt

117 The office of cenſor inſtituted.

Rome.

censors were Papirius and Sempronius, both patricians; and from this order they continued to be elected for near 100 years.

This new creation served to restore peace for some time among the orders; and the triumph gained over the Volscians by Geganius the consul, added to the universal satisfaction that reigned among the people.

This calm, however, was but of short continuance: for, some time after, a famine pressing hard upon the poor, the usual complaints against the rich were renewed; and these, as before, proving ineffectual, produced new seditions. The consuls were accused of neglect in not having laid in proper quantities of corn: they, however, disregarded the murmurs of the populace, content with exerting all their care in attempts to supply the pressing necessities. But though they did all that could be expected from active magistrates, in providing, and distributing provisions to the poor; yet Spurius Mælius, a rich knight, who had bought up all the corn of Tuscany, by far outshone them in liberality. This demagogue, inflamed with a secret desire of becoming powerful by the contentions in the state, distributed corn in great quantities among the poorer sort each day, till his house became the asylum of all such as wished to exchange a life of labour for one of lazy dependence. When he had thus gained a sufficient number of partizans, he procured large quantities of arms to be brought into his house by night, and formed a conspiracy, by which he was to obtain the command, while some of the tribunes, whom he had found means to corrupt, were to act under him, in seizing upon the liberties of his country. Minucius soon discovered the plot; and informing the senate thereof, they immediately formed the resolution of creating a dictator, who should have the power of quelling the conspiracy, without appealing to the people. Cincinnatus, who was now 80 years old, was chosen once more to rescue his country from impending danger. He began by summoning Mælius to appear; who refused to obey. He next sent Ahala, the master of his horse, to force him; who, meeting him in the forum, and pressing Mælius to follow him to the dictator's tribunal, upon his refusal Ahala killed him on the spot. The dictator applauded the resolution of his officer, and commanded the conspirator's goods to be sold, and his house to be demolished, distributing his stores among the people.

118 Disturbances by Mælius a knight

119 Who is [illegible]

The tribunes of the people were much enraged at the death of Mælius; and, in order to punish the senate, at the next election, instead of consuls, insisted upon restoring their military tribunes. With this the senate were obliged to comply. The next year, however, the government returned to its ancient channel, and consuls were chosen.

120 The destruction of Veii resolved.

The Veientes had long been the rivals of Rome; they had ever taken the opportunity of its internal distresses to ravage its territories, and had even threatened its ambassadors, sent to complain of these injuries, with outrage. In war they had been extremely formidable, and had cut off almost all the Fabian family; who, to the number of 306 persons, had voluntarily undertaken to defend the frontiers against their incursions. It seemed now therefore determined, that the city of Veii, whatever it should cost, was to fall; and the Romans accordingly sat regularly down before it, prepared for a long and painful resistance. The strength of the place, or the unskilfulness of the besiegers, may be inferred from the continuance of the siege, which lasted for 10 years; during which time the army continued encamped round it, lying in winter under tents made of the skins of beasts, and in summer driving on the operations of the attack. Various was the success, and many were the commanders that directed the siege: sometimes all the besiegers' works were destroyed, and many of their men cut off by sallies from the town; sometimes they were annoyed by an army of Veians, who attempted to bring assistance from without. A siege so bloody seemed to threaten depopulation to Rome itself, by draining its forces continually away; so that a law was obliged to be made for all the bachelors to marry the widows of the soldiers who were slain. In order to carry it on with greater vigour, Furius Camillus was created dictator, and to him was intrusted the sole power of managing the long protracted war. Camillus, who, without intrigue or any solicitation had raised himself to the first eminence in the state, had been made one of the censors some time before, and was considered as the head of that office; he was afterwards made a military tribune, and had in this post gained several advantages over the enemy. It was his great courage and abilities in the above offices that made him thought most worthy to serve his country on this pressing occasion, Upon his appointment, numbers of the people flocked to his standard, confident of success under so experienced a commander. Conscious, however, that he was unable to take the city by storm, he secretly wrought a mine into it with vast labour, which opened into the midst of the citadel. Certain thus of success, and finding the city incapable of relief, he sent to the senate, desiring that all who chose to share in the plunder of Veii should immediately repair to the army. Then giving his men directions how to enter at the breach, the city was instanty filled with his legions, to the amazement and consternation of the besieged, who, but a moment before, had rested in perfect security. Thus, like a second Troy, was the city of Veii taken, after a 10 years siege, and with its spoils enriched the conquerors; while Camillus himself, transported with the honour of having subdued the rival of his native city, triumphed after the manner of the kings of Rome, having his chariot drawn by four milk-white horses; a distinction which did not fail to disgust the majority of the spectators, as they considered those as sacred, and more proper for doing honour to their gods than their generals.

121 Is taken by Camillus.

122 His generosity to the Falisci.

His usual good fortune attended Camillus in another expedition against the Falisci; he routed their army, and besieged their capital city Falerii, which threatened a long and vigorous resistance. Here a schoolmaster, who had the care of the children belonging to the principal men of the city, having found means to decoy them into the Roman camp, offered to put them into the hands of Camillus, as the surest means of inducing the citizens to a speedy surrender. The general was struck with the treachery of a wretch whose duty it was to protect innocence, and not to betray it; and immediately ordered him to be stripped, his hands tied behind him, and in that ignominious manner to be whipped into the town by his own scholars.

This

Rome. This generous behaviour in Camillus effected more than his arms could do: the magiſtrates of the town immediately ſubmitted to the ſenate, leaving to Camillus the conditions of their ſurrender; who only fined them in a ſum of money to ſatisfy his army, and received them under the protection and into the alliance of Rome.

Notwithſtanding the veneration which the virtues of Camillus had excited abroad, they ſeemed but little adapted to bring over the reſpect of the turbulent tribunes at home, as they raiſed ſome freſh accuſation againſt him every day. To their other charges they added that of his having concealed a part of the plunder of Veii, particularly two brazen gates, for his own uſe; and appointed him a day on which to appear before the people. Camillus, finding the multitude exaſperated againſt him upon many accounts, deteſting their ingratitude, reſolved not to wait the ignominy of trial; but, embracing his wife and children, prepared to depart from Rome. He had already paſſed as far as one of the gates, unattended on his way, and unlamented. There he could ſuppreſs his indignation no longer; but, turning his face to the Capitol, and lifting up his hands to heaven, intreated all the gods that his country might one day be ſenſible of their injuſtice and ingratitude; and ſo ſaying, he paſſed forward to take refuge at Ardea, where he afterwards learned that he had been fined 1500 aſes by the tribunes at Rome.

123 He goes into voluntary exile.

The Romans indeed ſoon had reaſon to repent their uſage of Camillus; for now a more formidable enemy than ever they had met with threatened the republic: an inundation of Gauls, leaving their native woods, under the command of one Brennus, waſted every thing with fire and ſword. It is ſaid that one Cœditius, a man of the loweſt rank, pretended to have heard a miraculous voice, which pronounced diſtinctly theſe words: "Go to the magiſtrates, and tell them that the Gauls draw near." The meanneſs of the man made his warning deſpiſed; though, when the event ſhowed the truth of his prediction, Camillus erected a temple to the unknown Deity, and the Romans invented for him the name of *Aius Locutius*. Meſſenger after meſſenger arrived with the news of the progreſs and devaſtations of the Gauls; but the Romans behaved with as much ſecurity as if it had been impoſſible for them to have felt the effects of their depredations. At laſt envoys arrived at Rome, imploring the aſſiſtance of the republic againſt an army of Gauls, which had made an irruption into Italy, and now beſieged their city. The occaſion of the irruption and ſiege was this: Arunx, one of the chief men of Cluſium in Hetruria, had been guardian to a young lucumo, or lord of a lucumony, and had educated him in his houſe from his infancy. The lucumo, as ſoon as he was of an age to feel the force of paſſion, fell in love with his guardian's wife; and, upon the firſt diſcovery of their intrigue, conveyed her away. Arunx endeavoured to obtain reparation for the injury he had received; but the lucumo, by his intereſt and money, gained over the magiſtrates: ſo that the injured guardian, finding no protectors in Hetruria, reſolved to make his application to the Gauls. The people among all the Celtic nations, to whom he choſe to addreſs himſelf, were the Senones; and, in order to engage them in his quarrel, he acquainted them with the great plenty of Italy, and made them taſte of ſome Italian wines. Upon this the Senones reſolved to follow him; and a numerous army was immediately formed, which paſſing the Alps, under the conduct of their Hetrurian guide, and leaving the Celtæ in Italy unmoleſted, fell upon Umbria, and poſſeſſed themſelves of all the country from Ravenna to Picenum. They were about ſix years in ſettling themſelves in their new acquiſitions, while the Romans were carrying on the ſiege of Veii. At length Arunx brought the Senones before Cluſium, in order to beſiege that place, his wife and her lover having ſhut themſelves up there.

124 Italy invaded by the Gauls.

125 Occaſion of their invaſion.

Rome.

126 The Romans ſend an embaſſy to them.

The ſenate, being unwilling to engage in an open war with a nation which had never offended them, ſent an embaſſy of three young patricians, all brothers, and of the Fabian family, to bring about an accommodation between the two nations. Theſe ambaſſadors, being arrived at the camp of the Gauls, and conducted into the council, offered the mediation of Rome; and demanded of Brennus, the leader of the Gauls, What injury the Cluſini had done him; or what pretenſions any people from a remote country could have upon Hetruria? Brennus anſwered proudly, that his right lay in his ſword, and that all things belonged to the brave; but that, without having recourſe to this primitive law of nature, he had a juſt complaint againſt the Cluſians, who, having more lands than they could cultivate, had refuſed to yield to him thoſe they left untilled: And what other motives had you yourſelves, Romans (ſaid he), to conquer ſo many neighbouring nations? You have deprived the Sabines, the Albans, the Fidenates, the Æqui, and the Volſci, of the beſt part of their territories. Not that we accuſe you of injuſtice; but it is evident, that you thought this to be the prime and moſt ancient of all laws, to make the weak give way to the ſtrong. Forbear therefore to intereſt yourſelves for the Cluſini, or to allow us to take the part of the people you have ſubdued."

127 Imprudent conduct of the ambaſſadors.

The Fabii were highly provoked at ſo haughty an anſwer; but, diſſembling their reſentment, deſired leave to go into the town, under pretence of conferring with the magiſtrates. But they were no ſooner there, than they began to ſtir up the inhabitants to a vigorous defence; nay, forgetting their character, they put themſelves at the head of the beſieged in a ſally, in which Q. Fabius, the chief of the ambaſſadors, ſlew with his own hand one of the principal officers of the Gauls. Hereupon Brennus, calling the gods to witneſs the perfidiouſneſs of the Romans, and their violating the law of nations, immediately broke up the ſiege of Cluſium, and marched leiſurely to Rome, having ſent an herald before him, to demand that thoſe ambaſſadors, who had ſo manifeſtedly violated the law of nations, ſhould be delivered up to him. The Roman ſenate was greatly perplexed between their regard for the law of nations and their affection for the Fabii. The wiſeſt of the ſenate thought the demand of the Gauls to be but juſt and reaſonable: however, as it concerned perſons of great conſequence and credit, the conſcript fathers referred the affair to the people aſſembled by curiæ. As the Fabian family was very popular, the curiæ were ſo far from condemning the three brothers, that, at the next election of military tribunes, they were choſen the

128 The Gauls require them to be delivered up to them but are refuſed.

Rome. first. Brennus, looking upon the promotion of the Fabii as an high affront on his nation, haſtened his march to Rome.

As his army was very numerous, the inhabitants of the towns and villages through which he paſſed left their habitations at his approach; but he ſtopped nowhere, declaring that his deſign was only to be revenged on the Romans. The ſix military tribunes, to wit, Q. Fabius, Cæſo Fabius, Caius Fabius, Q. Sulpitius, Q. Servilius, and Sextus Cornelius, marched out of Rome at the head of 40,000 men, without either ſacrificing to the gods or conſulting the auſpices; eſſential ceremonies among a people that drew their courage and confidence from the propitious ſigns which the augurs declared to them. As moſt of the military tribunes were young, and men of more valour than experience, they advanced boldly againſt the Gauls, whoſe army was 70,000 ſtrong. The two armies met near the river Allia, about 60 furlongs from Rome. The Romans, that they might not be ſurrounded by the enemy, extended their wings ſo far as to make their centre very thin. Their beſt troops, to the number of 24,000 men, they poſted between the river and the adjoining hills; the reſt they placed on the hills. The Gauls firſt attacked the latter, who being ſoon put into confuſion, the forces in the plain were ſtruck with ſuch terror that they fled without drawing their ſwords. In this general diſorder, moſt of the ſoldiers, inſtead of returning to Rome fled to Veii: ſome were drowned as they endeavoured to ſwim acroſs the Tiber; many fell in the purſuit by the ſword of the conquerors; and ſome got to Rome, which they filled with terror and conſternation, it being believed there that all the reſt were cut off. The day after the battle, Brennus marched his troops into the neighbourhood of Rome, and encamped on the banks of the Anio. Thither his ſcouts brought him word, that the gates of the city lay open, and that not one Roman was to be ſeen on the ramparts. This made him apprehenſive of ſome ambuſcade, it being unreaſonable to ſuppoſe that the Romans would abandon their city to be plundered and ſacked without making any reſiſtance. On this conſideration he advanced ſlowly, which gave the Romans an opportunity to throw into the Capitol all the men who were fit to bear arms. They carried into it all the proviſions they could get; and, that they might laſt the longer, admitted none into the place but ſuch as were capable of defending it.

129 The Romans entirely defeated.

130 They retire into the Capitol.

As for the city, they had not ſufficient forces to defend it; and therefore the old men, women, and children, ſeeing themſelves abandoned, fled to the neighbouring towns. The Veſtals, before they left Rome, took care to hide every thing appropriated to the gods which they could not carry off. The two palladiums, and the ſacred fire, they took with them. When they came to the Janiculus, one Albinius, a plebeian, who was conveying his wife and children in a carriage to a place of ſafety, ſeeing the ſacred virgins bending under their load, and their feet bloody, made his family alight, put the prieſteſſes and their gods into the carriage, and conducted them to Cære, a city of Hetruria, where they met with a favourable reception. The Veſtals remained at Cære, and there continued to perform the uſual rites of religion; and hence thoſe rites were called *ceremonies*. But while the reſt of the citizens at Rome were providing for their ſafety, about 80 of the moſt illuſtrious and venerable old men, rather than fly from their native city, choſe to devote themſelves to death by a vow, which Fabius the high pontiff pronounced in their names. The Romans believed, that, by theſe voluntary devotements to the infernal gods, diſorder and confuſion was brought among the enemy. Of theſe brave old men ſome were pontifices, others had been conſuls, and other generals of armies, who had been honoured with triumphs. To complete their ſacrifice with a ſolemnity and pomp becoming the magnanimity and conſtancy of the Romans, they dreſſed themſelves in their pontifical, conſular, and triumphal robes; and repairing to the forum, ſeated themſelves there in their curule chairs, expecting the enemy and death with the greateſt conſtancy.

131 Origin of the word ceremonies.

Rome. 132 Rome pillaged and burnt.

At length Brennus, having ſpent three days in uſeleſs precautions, entered the city the fourth day after the battle. He found the gates open, the walls without defence, and the houſes without inhabitants. Rome appeared to him like a mere deſart; and this ſolitude increaſed his anxiety. He could not believe, either that the Romans were lodged in the Capitol, or that ſo numerous a people ſhould abandon the place of their nativity. On the other hand, he could nowhere ſee any armed men but on the walls of the citadel. However, having firſt ſecured all the avenues to the Capitol with ſtrong bodies of guards, he gave the reſt of his ſoldiers leave to diſperſe themſelves all over the city and plunder it. Brennus himſelf advanced into the forum with the troops under his command, in good order; and there he was ſtruck with admiration at the unexpected ſight of the venerable old men who had devoted themſelves to death. Their magnificent habits, the majeſty of their countenances, the ſilence they kept, their modeſty and conſtancy at the approach of his troops, made him take them for ſo many deities: for they continued as motionleſs as ſtatues, and ſaw the enemy advance without ſhowing the leaſt concern. The Gauls kept a great while at an awful diſtance from them, being afraid to come near them. But at length one ſoldier bolder than the reſt, having out of curioſity touched the beard of M. Papirius, the venerable old man, not being uſed to ſuch familiarity, gave him a blow on the head with his ivory ſtaff. The ſoldier in revenge immediately killed him; and the reſt of the Gauls following his example, ſlaughtered all thoſe venerable old men without mercy.

133 They inveſt the Capitol.

After this the enemy ſet no bounds to their rage and fury. They plundered all places, dragging ſuch of the Romans as had ſhut themſelves up in their houſes into the ſtreets, and there putting them to the ſword without diſtinction of age or ſex. Brennus then inveſted the Capitol; but being repulſed with great loſs, in order to be revenged of the Romans for their reſiſtance, he reſolved to lay the city in aſhes. Accordly, by his command, the ſoldiers ſet fire to the houſes, demoliſhed the temples and public edifices, and raſed the walls to the ground. Thus was the famous city of Rome entirely deſtroyed; nothing was to be ſeen in the place where it ſtood but a few little hills covered with ruins, and a wide waſte, in which the Gauls who inveſted the Capitol were encamped. Brennus, finding he ſhould never be able to take a place which nature had ſo well fortified otherwiſe than by famine, turned the ſiege into a blockade. But in the mean time, his army

Rome. army being diſtreſſed for want of proviſions, he ſent out parties to pillage the fields, and raiſe contributions in the neighbouring cities. One of theſe parties appeared before Ardea, where the great Camillus had now ſpent two years in a private life. Notwithſtanding the affront he had received at Rome, the love he bore his country was not in the leaſt diminiſhed. The ſenate of Ardea being met to deliberate on the meaſures to be taken with relation to the Gauls, Camillus, more afflicted at the calamities of his country than at his own baniſhment, deſired to be admitted into the council, where, with his eloquence, he prevailed upon the Ardeates to arm their youth in their own defence, and refuſe the Gauls admittance into their city.

Hereupon the Gauls encamped before the city; and as they deſpiſed the Ardeates after they had made themſelves maſters of Rome, they preſerved neither order nor diſcipline in the camp, but ſpent whole days in drinking. Hereupon Camillus, having eaſily perſuaded the youth of the city to follow him, marched out of Ardea in a very dark night, ſurpriſed the Gauls drowned in wine, and made a dreadful ſlaughter of them. Thoſe who made their eſcape under the ſhelter of the night fell next day into the hands of the peaſants, by whom they were maſſacred without mercy. This defeat of the enemy revived the courage of the Romans ſcattered about the country, eſpecially of thoſe who had retired to Veii after the unfortunate battle of Allia. There was not one of them who did not condemn himſelf for the exile of Camillus, as if he had been the author of it; and looking upon that great man as their laſt reſource, they reſolved to chooſe him for their leader. Accordingly, they ſent without delay ambaſſadors to him, beſeeching him to take into his protection the fugitive Romans, and the wrecks of the defeat at Allia. But Camillus would not accept of the command of the troops till the people aſſembled by curiæ had legally conferred it upon him. He thought the public authority was lodged in the hands of thoſe who were ſhut up in the citadel, and therefore would undertake nothing at the head of the Roman troops till a commiſſion was brought him from thence.

134 A great number of them cut off by Camillus.

To do this was very difficult, the place being inveſted on all ſides by the enemy. However, one Pontius Cominius, a man of mean birth, but bold, and very ambitious of glory, undertook it. He put on a light habit, and providing himſelf with cork to keep the longer above water, threw himſelf into the Tiber above Rome in the beginning of the night, and ſuffered himſelf to be carried down with the ſtream. At length he came to the foot of the Capitol, and landed at a ſteep place where the Gauls had not thought it neceſſary to poſt any centinels. There he mounted with great difficulty to the rampart of the citadel; and having made himſelf known to the guards, he was admitted into the place, and conducted to the magiſtrates. The ſenate being immediately aſſembled, Pontius gave them an account of Camillus's victory; and in the name of all the Romans at Veii demanded that great captain for their general. There was not much time ſpent in debates: the curiæ being called together, the act of condemnation which had been paſſed on Camillus was abrogated, and he named dictator with one voice. Pontius was immediately diſpatched with the decree; and the ſame good fortune which had attended him to the Capitol accompanied him in his return. Thus was Camillus, from the ſtate of baniſhment, raiſed at once to be ſovereign magiſtrate of his country. His promotion to the command was no ſooner known, but ſoldiers flocked from all parts to his camp; inſomuch that he ſoon ſaw himſelf at the head of above 40,000 men, partly Romans and partly allies, who all thought themſelves invincible under ſo great a general.

135 He is choſen dictator.

136 The Gauls endeavour to ſurpriſe the Capitol;

While he was taking proper meaſures to raiſe the blockade of the citadel, ſome Gauls rambling round the place, perceived on the ſide of the hill the print of Pontius's hands and feet. They obſerved likewiſe, that the moſs on the rocks was in ſeveral places torn up. From theſe marks they concluded, that ſomebody had lately gone up to and returned from the capitol. The Gauls immediately made their report to Brennus of what they had obſerved; and that experienced commander laid a deſign, which he imparted to nobody, of ſurpriſing the place by the ſame way that the Roman had aſcended. With this view he choſe out of the army ſuch ſoldiers as had dwelt in mountainous countries, and been accuſtomed from their youth to climb precipices. Theſe he ordered, after he had well examined the nature of the place, to aſcend in the night the ſame way that was marked out for them; climbing two abreaſt, that one might ſupport the other in getting up the ſteep parts of the precipice. By this means they advanced with much difficulty from rock to rock, till they arrived at the foot of the wall. They proceeded with ſuch ſilence, that they were not diſcovered or heard, either by the centinels who were upon guard in the citadel, or even by the dogs, that are uſually awaked and alarmed at the leaſt noiſe. But though they eluded the ſagacity of the dogs, they could not eſcape the vigilance of the geeſe. A flock of theſe birds was kept in a court of the Capitol in honour of Juno, and near her temple. Notwithſtanding the want of proviſions in the garriſon, they had been ſpared out of religion; and as theſe creatures are naturally quick of hearing, they were alarmed at the firſt approach of the Gauls; ſo that running up and down, with their cackling and beating of their wings, they awaked Manlius, a gallant ſoldier, who ſome years before had been conſul. He ſounded an alarm, and was the firſt man who mounted the rampart, where he found two Gauls already upon the wall. One of theſe offered to diſcharge a blow at him with his battle-ax; but Manlius cut off his right hand at one blow, and gave the other ſuch a puſh with his buckler, that he threw him headlong from the top of the rock to the bottom. He, in his fall, drew many others with him; and, in the mean time, the Romans crowding to the place, preſſed upon the Gauls, and tumbled them one over another. As the nature of the ground would not ſuffer them to make a regular retreat, or even to fly, moſt of them, to avoid the ſwords of the enemy, threw themſelves down the precipice, ſo that very few got ſafe back to their camp.

137 But are diſcovered and repulſed,

As it was the cuſtom of the Romans at that time not to ſuffer any commendable action to go unrewarded, the tribune Sulpitius aſſembled his troops the next morning, in order to beſtow the military rewards on thoſe who, the night before, had deſerved them. Among theſe Manlius was firſt named; and, in acknowledgment of the important ſervice he had juſt rendered the ſtate, every ſoldier gave him part of the corn which he received

Rome. ved ſparingly from the public ſtock, and a little meaſure of wine out of his ſcanty allowance. An inconſiderable preſent indeed in itſelf, but very acceptable at that time to the perſon on whom it was beſtowed. The tribune's next care was to puniſh the negligent: accordingly the captain of the guard, who ought to have had an eye over the centinels, was condemned to die, and, purſuant to his ſentence, thrown down from the top of the Capitol. The Romans extended their puniſhments and rewards even to the animals. Geeſe were ever after had in honour at Rome, and a flock of them always kept at the expence of the public. A golden image of a gooſe was erected in memory of them, and a gooſe every year carried in triumph upon a ſoft litter finely adorned; whilſt dogs were held in abhorrence by the Romans, who every year impaled one of them on a branch of elder.

Ths blockade of the Capitol had already laſted ſeven months; ſo that the famine began to be very ſenſibly felt both by the beſieged and beſiegers. Camillus, ſince his nomination to the dictatorſhip, being maſter of the country, had poſted ſtrong guards on all the roads; ſo that the Gauls dared not ſtir out for fear of being cut to pieces. Thus Brennus, who beſieged the Capitol, was beſieged himſelf, and ſuffered the ſame inconveniences which he made the Romans undergo. Beſides, a plague raged in his camp, which was placed in the midſt of the ruins of the demoliſhed city, his men lying confuſedly among the dead carcaſes of the Romans, whom they had ſlain, and not buried. So great a number of them died in one quarter of the city, that it was afterwards called *Buſta Gallica*, or the place where the dead bodies of the Gauls were burnt. But, in the mean time, the Romans in the Capitol were more pinched with want than the Gauls. They were reduced to the laſt extremity, and at the ſame time ignorant both of the lamentable condition to which the enemy's army was brought, and of the ſteps Camillus was taking to relieve them. That great general only waited for a favourable opportunity to fall upon the enemy; but, in the mean time, ſuffered them to pine away in their infected camp, not knowing the extreme want the Romans endured in the Capitol, where they were ſo deſtitute of all ſorts of proviſions, that they could no longer ſubſiſt. Matters being brought to this ſad paſs on both ſides, the centinels of the Capitol, and thoſe of the enemy's army, began to talk to one another of an accommodation. Their diſcourſes came at length to the ears of their leaders, who were not averſe to the deſign.

The ſenate, not knowing what was become of Camillus, and finding themſelves hard pinched by hunger, reſolved to enter upon a negociation, and empowered Sulpitius, one of the military tribunes, to treat with the Gauls; who made no great difficulty in coming to terms, they being no leſs deſirous than the Romans to put an end to the war. In a conference, therefore, between Brennus and Sulpitius, an agreement was made, and ſworn to. The Romans were to pay to the Gauls 1000 pounds weight of gold, that is, 45,000l. Sterling; and the latter were to raiſe the ſiege of the Capitol, and quit all the Roman territories. On the day appointed, Sulpitius, brought the ſum agreed on, and Brennus the ſcales and weights; for there were no gold or ſilver coins at that time, metals paſſing only by weight. We are told, that the weights of the Gauls were falſe, and their ſcales untrue; which Sulpitius complaining of. Brennus, inſtead of redreſſing the injuſtice, threw his ſword and belt into the ſcale where the weights were; and when the tribune aſked him the meaning of ſo extraordinary a behaviour, the only anſwer he gave was, *Væ victis!* "Wo to the conquered!" Sulpitius was ſo ſtung with this haughty anſwer, that he was for carrying the gold back into the Capitol, and ſuſtaining the ſiege to the laſt extremity; but others thought it adviſable to put up the affront, ſince they had ſubmitted to a far greater one, which was to pay any thing at all. Rome.

138 The Romans agree to pay 1000 pounds of gold for their ranſom.

During theſe diſputes of the Roman deputies among themſelves and with the Gauls, Camillus advanced with his army to the very gates of the city; and being there informed of what was doing, he commanded the main body to follow him ſlowly and in good order, while he, with the choiceſt of his men, haſtened to the place of the parley. The Romans, overjoyed at his unexpected arrival, opened to make room for him as the ſupreme magiſtrate of the republic, gave him an account of the treaty they had made with the Gauls, and complained of the wrong Brennus did them in the execution of it. They had ſcarce done ſpeaking, when Camillus cried out, "Carry back this gold into the Capitol; and you, Gauls, retire with your ſcales and weights. Rome muſt not be redeemed with gold, but with ſteel." Brennus replied, That he contravened a treaty which was concluded and confirmed with mutual oaths. "Be it ſo (anſwered Camillus); yet it is of no force, having been made by an inferior magiſtrate, without the privity or conſent of the dictator. I, who am inveſted with the ſupreme authority over the Romans, declare the contract void." At theſe words Brennus flew into a rage; and both ſides drawing their ſwords, a confuſed ſcuffle enſued among the ruins of the houſes, and in the narrow lanes. The Gauls, after an inconſiderable loſs, thought fit to retire within their camp; which they abandoned in the night, not caring to engage Camillus's whole army, and, having marched eight miles, encamped on the Gabinian way. Camillus purſued them as ſoon as it was day, and, coming up with them, gave them a total overthrow. The Gauls, according to Livy, made but a faint reſiſtance, being diſheartened at the loſs they had ſuſtained the day before. It was not, ſays that author, ſo much a battle as a ſlaughter. Many of the Gauls were ſlain in the action, more in the purſuit; but the greater number were cut off, as they wandered up and down in the fields, by the inhabitants of the neighbouring villages. In ſhort, there was not one ſingle Gaul left to carry to his countrymen the news of this fatal cataſtrophe. The camp of the barbarians was plundered; and Camillus, loaded with ſpoils, returned in triumph to the city, the ſoldiers in their ſongs ſtyling him *Romulus, Father of his country*, and *Second founder of Rome*.

139 Camillus drives away the Gauls.

140 The Gauls entirely cut off.

As the houſes of Rome were all demoliſhed, and the walls razed, the tribunes of the people renewed, with more warmth than ever, an old project which had occaſioned great diſputes. They had formerly propoſed a law for dividing the ſenate and government between the cities of Veii and Rome. Now this law was revived; nay, moſt of the tribunes were for entirely abandoning their old ruined city, and making Veii the ſole ſeat

141 Diſputes about removing to Veii.

Rome. seat of the empire. The people were inclined to favour the project, Veii offering them a place fortified by art and nature, good houſes ready built, a wholeſome air, and a fruitful territory. On the other hand, they had no materials for rebuilding a whole city, were quite exhauſted by misfortunes, and even their ſtrength was greatly diminiſhed. This gave them a reluctance to ſo great an undertaking, and emboldened the tribunes to utter ſeditious harangues againſt Camillus, as a man too ambitious of being the reſtorer of Rome. They even inſinuated that the name of Romulus, which had been given him threatened the republic with a new king. But the ſenate took the part of Camillus, and, being deſirous to ſee Rome rebuilt, continued him, contrary to cuſtom, a full year in the office of dictator; during which time he made it his whole buſineſs to ſuppreſs the ſtrong inclination of the people to remove to Veii. Having aſſembled the curiæ, he expoſtulated with them upon the matter; and, by arguments drawn from prudence, religion, and glory, prevailed upon them to lay aſide all thoughts of leaving Rome. As it was neceſſary to have the reſolution of the people confirmed by the ſenate, the dictator reported it to the conſcript fathers, leaving every one at full liberty to vote as he pleaſed. While L. Lucretius, who was to gave his opinion the firſt, was beginning to ſpeak, it happened that a centurion, who with his company had been upon guard, and was then marching by the ſenate-houſe, cried out aloud, "Plant your colours, enſign; this is the beſt place to ſtay in." Theſe words were conſidered as dictated by the gods themſelves; and Lucretius, taking occaſion from them to urge the neceſſity of ſtaying at Rome, "An happy omen, (cried he); I adore the gods who gave it." The whole ſenate applauded his words; and a decree was paſſed without oppoſition for rebuilding the city.

Though the tribunes of the people were defeated by Camillus in this point, they reſolved to exerciſe their authority againſt another patrician, who had indeed deſerved puniſhment. This was Q. Fabius, who had violated the law of nations, and thereby provoked the Gauls, and occaſioned the burning of Rome. His crime being notorious, he was ſummoned by C. Martius Rutilus before the aſſembly of the people, to anſwer for his conduct in his embaſſy. The criminal had reaſon to fear the ſevereſt puniſhment: but his relations gave out that he died ſuddenly; which generally happened when the accuſed perſon had determined to prevent his condemnation, and the ſhame of a public puniſhment. On the other hand, the republic gave an houſe ſituated on the Capitol to M. Manlius, as a monument of his valour, and of the gratitude of his fellow-citizens. Camillus cloſed this year by laying down his dictatorſhip: whereupon an interregnum enſued, during which he governed the ſtate alternately with P. Cornelius Scipio; and it fell to his lot to preſide at the election of new magiſtrates, when L. Valerius Poplicola, L. Virginius Tricoſtus, P. Cornelius Coſſus, A. Manlius Capitolinus, L. Æmilius Mamercinus, and L. Poſthumius Albinus, were choſen. The firſt care of theſe new magiſtrates was to collect all the ancient monuments of the religion and civil laws of Rome which could be found among the ruins of the demoliſhed city. The laws of the twelve tables, and ſome of the laws of the kings, had been written on braſs, and

142 Marcus Manlius rewarded.

fixed up in the forum; and the treaties made with ſeveral nations had been engraved on pillars erected in the temples. Pains were therefore taken to gather up the ruins of theſe precious monuments; and what could not be found was ſupplied by memory. The pontifices, on their part, took care to re-eſtabliſh the religious ceremonies, and made alſo a liſt of lucky and unlucky days. Rome.

143 The city rebuilt.

And now the governors of the republic applied themſelves wholly to rebuild the city. Plutarch tells us, that as the workmen were digging among the ruins of the temple of Mars, they found Romulus's augural ſtaff untouched by the flames; and that this was looked upon as a prodigy, from whence the Romans inferred that their city would continue for ever. The expence of building private houſes was partly defrayed out of the public treaſure. The ædiles had the direction of the works; but they had ſo little taſte for order or beauty, that the city, when rebuilt, was even leſs regular than in the time of Romulus. And though in Auguſtus's time, when Rome became the capital of the known world, the temples, palaces, and private houſes, were built in a more magnificent manner than before; yet even then theſe new decorations did not rectify the faults of the plan upon which the city had been built after its firſt demolition.

144 A general combination againſt the Romans.

Rome was ſcarce reſtored, when her citizens were alarmed by the news that all her neighbours were combining to her deſtruction. The Æqui, the Volſci, the Hetrurians, and even her old friends the Latins and the Hernici, entered into an alliance againſt her, in hopes of oppreſſing her before ſhe had recovered her ſtrength. The republic, under this terror, nominated Camillus dictator a third time. This great commander, having appointed Servilius to be his general of horſe, ſummoned the citizens to take arms, without excepting even the old men. He divided the new levies into three bodies. The firſt, under the command of A. Manlius, he ordered to encamp under the walls of Rome; the ſecond he ſent into the neighbourhood of Veii; and marched himſelf at the head of the third, to relieve the tribunes, who were cloſely beſieged in their camp by the united forces of the Volſci and Latins. Finding the enemy encamped near Lanuvium, on the declivity of the hill Marcius, he poſted himſelf behind it, and, by lighting fires, gave the diſtreſſed Romans notice of his arrival. The Volſci and Latins, when they underſtood that Camillus was at the head of an army newly arrived, were ſo terrified, that they ſhut themſelves up in their camp, which they fortified with great trees cut down in haſte. The dictator, obſerving that this barrier was of green wood, and that every morning there aroſe a great wind, which blew full upon the enemy's camp, formed the deſign of taking it by fire. With this view he ordered one part of his army to go by break of day with fire-brands to the windward ſide of the camp, and the other to make a briſk attack on the oppoſite ſide. By this means the enemy were entirely defeated, and their camp taken. Camillus then commanded his men to extinguiſh the flames, in order to ſave the booty, with which he rewarded his army. He then left his ſon in the camp to guard the priſoners; and, entering the country of the Æqui, made himſelf maſter of their capital city Bola. From thence he marched againſt the Volſci; whom

145 Camillus defeats the Volſci and Latins.

Rome.

whom he entirely reduced, after they had waged war with the Romans for the ſpace of 107 years. Having ſubdued this untractable people, he penetrated into Hetruria, in order to relieve Sutrium, a town in that country in alliance with Rome, and beſieged by a numerous army of Hetrurians. But, notwithſtanding all the expedition Camillus could uſe, he did not reach the place before it had capitulated. The Sutrini, being greatly diſtreſſed for want of proviſions, and exhauſted with labour, had ſurrendered to the Hetrurians, who had granted them nothing but their lives, and the cloaths on their backs. In this deſtitute condition they had left their own coontry, and were going in ſearch of new habitations, when they met Camillus leading an army to their relief.

146 And the Hetrurians.

The unfortunate multitude no ſooner ſaw the Romans, but they threw themſelves at the dictator's feet, who, moved at this melancholy ſight, deſired them to take a little reſt, and refreſh themſelves, adding, that he would ſoon dry up their tears, and transfer their ſorrows from them to their enemies. He imagined, that the Hetrurians would be wholly taken up in plundering the city, without being upon their guard, or obſerving any diſcipline. And herein he was not miſtaken. The Hetrurians did not dream that the dictator could come ſo ſpeedily from ſuch a diſtance to ſurpriſe them; and therefore were wholly employed in plundering the houſes and carrying off the booty, or feaſting on the proviſions they had found in them. Many of them were put to the ſword, and an incredible number made priſoners; and the city was reſtored to its ancient inhabitants, who had not waited in vain for the performance of the dictator's promiſe. And now, after theſe glorious exploits, which were finiſhed in ſo ſhort a time, the great Camillus entered Rome in triumph a third time.

Camillus having reſigned his dictatorſhip, the republic choſe ſix new military tribunes, Q. Quinctius, Q. Servius, L. Julius, L. Aquilius, L. Lucretius, and Ser. Sulpitius. During their adminiſtration the country of the Æqui was laid waſte, in order to put it out of their power to revolt anew; and the two cities of Cortuoſa and Contenebra, in the lucumony of the Tarquinienſes, were taken from the Hetrurians, and entirely demoliſhed. At this time it was thought proper to repair the Capitol, and add new works to that part of the hill where the Gauls had endeavoured to ſcale the citadel. Theſe works were eſteemed very beautiful, as Livy informs us, even in the time of Auguſtus, after the city was embelliſhed with moſt magnificent decorations.

And now Rome being reinſtated in her former flouriſhing condition, the tribunes of the people, who had been for ſome time quiet, began to renew their ſeditious harangues, and revive the old quarrel about the diviſion of the conquered lands. The patricians had appropriated to themſelves the Pomptin territory lately taken from the Volſci, and the tribunes laid hold of this opportunity to raiſe new diſturbances. But the citizens being ſo drained of their money that they had not enough left to cultivate new farms and ſtock them with cattle, the declamations of the tribunes made no impreſſion upon their minds; ſo that the project vaniſhed. As for the military tribunes, they owned that their election had been defective; and, leſt the irregularities of the former comitia ſhould be continued in the ſucceeding ones, they voluntarily laid down their office. So that, after a ſhort interregnum, during which M. Manlius, Ser. Sulpitius, and L. Valerius Potitus, governed the republic, ſix new military tribunes L. Papirius, C. Surgius, L. Æmilius, L. Menenius, L. Valerius, and C. Cornelius, were choſen for the enſuing year, which was ſpent in works of peace. A temple, which had been vowed to Mars during the war with the Gauls, was built, and conſecrated by T. Quinctius, who preſided over the affairs of religion. As there had hitherto been but few Roman tribes beyond the Tiber which had a right of ſuffrage in the comitia, four new ones were added, under the name of the *Stellatina*, *Tramontina*, *Sabatina*, and *Arnienſis*; ſo that the tribes were now in all 25, which enjoyed the ſame rights and privileges.

Rome.

147 Unbounded power conferred on Camillus.

The expectation of an approaching war induced the centuries to chooſe Camillus one of the military tribunes for the next year. His colleagues were Ser. Cornelius, Q. Servilius, L. Quinctius, L. Horatius, and P. Valerius. As all theſe were men of moderation, they agreed to inveſt Camillus with the ſole management of affairs in time of war; and accordingly in full ſenate transferred all their power into his hands; ſo that he became in effect dictator. It had been already determined in the ſenate to turn the arms of the republic againſt the Hetrurians; but, upon advice that the Antiates had entered the Pomptin territory, and obliged the Romans who had taken poſſeſſion of it to retire, it was thought neceſſary to humble them before the republic engaged in any other enterpriſe. The Antiates had joined the Latins and Hernici near Satricum; ſo that the Romans, being terrified at their prodigious numbers, ſhewed themſelves very backward to engage; which Camillus perceiving, he inſtantly mounted his horſe, and riding through all the ranks of the army, encouraged them by a proper ſpeech; after which he diſmounted, took the next ſtandard-bearer by the hand, led him towards the enemy, and cried out, *Soldiers, advance*. The ſoldiery were aſhamed not to follow a general who expoſed himſelf to the firſt attack; and therefore, having made a great ſhout, they fell upon the enemy with incredible fury. Camillus, in order to increaſe their eagerneſs ſtill more, commanded a ſtandard to be thrown into the middle of the enemy's battalions; which made the ſoldiers, who were fighting in the firſt ranks, exert all the reſolution they could to recover it. The Antiates, not being able any longer to make head againſt the Romans, gave way, and were entirely defeated. The Latins and Hernici ſeparated from the Volſci, and returned home. The Volſci, ſeeing themſelves thus abandoned by their allies, took refuge in the neighbouring city of Satricum; which Camillus immediately inveſted, and took by aſſault. The Volſci threw down their arms, and ſurrendered at diſcretion. He then left his army under the command of Valerius; and returned to Rome to ſolicit the conſent of the ſenate, and to make the neceſſary preparations for undertaking the ſiege of Antium.

148 Who gives the Antiates &c. a great defeat.

149 His other ſucceſſes.

But, while he was propoſing this affair to the ſenate, deputies arrived from Nepet and Sutrium, two cities in alliance with Rome in the neighbourhood of Hetruria, demanding ſuccours againſt the Hetrurians, who threatened to beſiege theſe two cities, which were the keys of Hetruria. Hereupon the expedition againſt

Rome. Antium was laid aſide, and Camillus commanded to haſten to the relief of the allied cities, with the troops which Servilius had kept in readineſs at Rome in caſe of an emergency. Camillus immediately ſet out for the new war; and, upon his arrival before Sutrium, found that important place not only beſieged, but almoſt taken, the Hetrurians having made themſelves maſters of ſome of the gates, and gained poſſeſſion of all the avenues leading to the city. However, the inhabitants no ſooner heard that Camillus was come to their relief, but they recovered their courage, and, by barricadoes made in the ſtreets, prevented the enemy from making themſelves maſters of the whole city. Camillus in the mean time having divided his army into two bodies, ordered Valerius to march round the walls, as if he deſigned to ſcale them, while he with the other undertook to charge the Hetrurians in the rear, force his way into the city, and ſhut up the enemy between the beſieged and his troops. The Romans no ſooner appeared but the Hetrurians betook themſelves to a diſorderly flight through a gate which was not inveſted. Camillus's troops made a dreadful ſlaughter of them within the city, while Valerius put great numbers of them to the ſword without the walls. From reconquering Sutrium, Camillus haſtened to the relief of Nepet. But that city being better affected to the Hetrurians than to the Romans, had voluntarily ſubmitted to the former. Wherefore Camillus, having inveſted it with his whole army, took it by aſſault, put all the Hetrurian ſoldiers without diſtinction to the ſword, and condemned the authors of the revolt to die by the axes of the lictors. Thus ended Camillus's military tribuneſhip, in which he acquired no leſs reputation than he had done in the moſt glorious of his dictatorſhips.

150 Ambition of M. Manlius.

In the following magiſtracy of ſix military tribunes, a dangerous ſedition is ſaid to have taken place through the ambition of Marcus Manlius, who had ſaved the Capitol from the Gauls in the manner already related. Though this man had pride enough to deſpiſe all the other great men in Rome, yet he envied Camillus, and took every opportunity of magnifying his own exploits beyond thoſe of the dictator. But not finding ſuch a favourable reception from the nobility as he deſired, he concerted meaſures with the tribunes of the people, and ſtrove to gain the affections of the multitude. Not content with renewing the propoſal for the diſtribution of conquered lands, he alſo made himſelf an advocate for inſolvent debtors, of whom there was now a great number, as moſt of the lower claſs had been obliged to borrow money in order to rebuild their houſes. The ſenate, alarmed at this oppoſition, created A. Cornelius Coſſus dictator, for which the war with the Volſci afforded them a fair pretence. Manlius, however, ſtill continued to inflame the people againſt the patricians. Beſides the moſt unbounded perſonal generoſity, he held aſſemblies at his own houſe (in the citadel), where he confidently gave out that the ſenators, not content with being the poſſeſſors of thoſe lands which ought to have been equally divided among all the citizens, had concealed, with an intent to appropriate it to their own uſe, all the gold which was to have been paid to the Gauls, and which would alone be ſufficient to diſcharge the debts of all the poor plebeians; and he moreover promiſed to ſhow in due time where this treaſure was concealed. For this aſſertion he was brought before the dictator; who commanded him to diſcover where the pretended treaſure was, or to confeſs openly before the whole aſſembly that he had ſlandered the ſenate.—Manlius replied, that the dictator himſelf, and the principal perſons in the ſenate, could only give the proper intelligence of this treaſure, as they had been the moſt active in ſecuring it. Upon this he was committed to priſon; but the people made ſuch diſturbance, that the ſenate were ſoon after fain to releaſe him. By this he was emboldened to continue his former practices; till at laſt the ſenate gave an order to the military tribunes to take care that the commonwealth ſuffered no detriment from the pernicious projects of Marcus Manlius, and even gave them authority to aſſaſſinate him, if they found it neceſſary ſo to do. At laſt, however, he was publicly accuſed of aſpiring to be king; however, the people, it is ſaid, were ſo ſtruck with gratitude, on account of his having delivered the Capitol from the Gauls, that they could not reſolve to condemn him. But the military tribunes, who, it ſeems, were bent on his deſtruction, having appointed the aſſembly to be held without the city, there obtained their wiſh. Manlius was thrown headlong from the Capitol itſelf: it was thenceforth decreed that no patrician ſhould dwell in the Capitol or citadel; and the Manlian family reſolved that no member of it ſhould ever afterwards bear the prænomen of *Marcus*. No ſooner was Manlius dead, however, than the people lamented his fate; and becauſe a plague broke out ſoon after, they imputed it to the anger of the gods on account of the deſtruction of the hero who had ſaved the ſtate (A).

151 Who is condemned and executed.

The Romans, having now triumphed over the Sabines, the Etrurians, the Latins, the Hernici, the Æqui, and the Volſcians, began to look for greater conqueſts. They accordingly turned their arms againſt the Samnites, a people about 100 miles eaſt from the city, deſcended from the Sabines, and inhabiting a large tract of ſouthern Italy, which at this day makes a conſiderable part of the kingdom of Naples. Valerius Corvus and Cornelius were the two conſuls, to whoſe care it firſt fell to manage this dreadful contention between the rival ſtates.

152 War with the Samnites.

Valerius was one of the greateſt commanders of his time; he was ſurnamed Corvus, from a ſtrange circumſtance of being aſſiſted by a crow in a ſingle combat, in which he fought and killed a Gaul of a gigantic ſtature. To his colleague's care it was conſigned to lead an army to Samnium, the enemy's capital; while Corvus was ſent to relieve Capua, the capital of the

(A) The above accounts are exactly conformable to what is to be found in the beſt Latin hiſtorians; nevertheleſs they are far from being reckoned univerſally authentic. Mr Hooke, in his annotations on the death of M. Manlius, has given very ſtrong reaſons againſt believing either that Camillus reſcued the gold from the Gauls, or that Manlius was condemned. See *Hooke's Roman Hiſtory*. Vol. II. p. 326, *et ſeq.*

Rome. Campanians. The Samnites were the braveſt men the Romans had ever yet encountered, and the contention between the two nations was managed on both ſides with the moſt determined reſolution. But the fortune of Rome prevailed; the Samnites at length fled, averring, that they were not able to withſtand the fierce looks and the fire-darting eyes of the Romans. The other conſul, however, was not at firſt ſo fortunate; for having unwarily led his army into a defile, he was in danger of being cut off, had not Decius, a tribune of the army, poſſeſſed himſelf of an hill which commanded the enemy: ſo that the Samnites, being attacked on either ſide, were defeated with great ſlaughter, no leſs than 30,000 of them being left dead upon the field of battle.

Some time after this victory, the ſoldiers who were ſtationed at Capua mutinying, forced Quintius, an old and eminent ſoldier, who was then reſiding in the country, to be their leader; and, conducted by their rage more than their general, came within eight miles of the city. So terrible an enemy, almoſt at the gates, not a little alarmed the ſenate; who immediately created Valerius Corvus dictator, and ſent him forth with another army to oppoſe them. The two armies were now drawn up againſt each other, while fathers and ſons beheld themſelves prepared to engage in oppoſite cauſes; but Corvus, knowing his influence among the ſoldiery, inſtead of going forward to meet the mutineers in an hoſtile manner, went with the moſt cordial friendſhip to embrace and expoſtulate with his old acquaintances. His conduct had the deſired effect. Quintius, as their ſpeaker, only deſired to have their defection from their duty forgiven; and as for himſelf, as he was innocent of their conſpiracy, he had no reaſon to ſolicit pardon for his offences.

A war between the Romans and the Latins followed ſoon after; but as their habits, arms, and language, were the ſame, the moſt exact diſcipline was neceſſary to prevent confuſion in the engagement. Orders, therefore, were iſſued by Manlius the conſul, that no ſoldier ſhould leave his ranks upon whatever provocation; and that he ſhould be certainly put to death who ſhould offer to do otherwiſe. With theſe injunctions, both armies were drawn out in array, and ready to begin; when Metius, the general of the enemy's cavalry, puſhed forward from his lines, and challenged any knight in the Roman army to ſingle combat. For ſome time there was a general pauſe, no ſoldier offering to diſobey his orders, till Titus Manlius, the conſul's own ſon, burning with ſhame to ſee the whole body of the Romans intimidated, boldly ſallied out againſt his adverſary. The ſoldiers on both ſides for a while ſuſpended the general engagement to be ſpectators of this fierce encounter. Manlius killed his adverſary; and then diſpoiling him of his armour, returned in triumph to his father's tent, where he was preparing and giving orders relative to the engagement. Howſoever he might have been applauded by his fellow-ſoldiers, being as yet doubtful of the reception he ſhould find from his father, he came, with heſitation, to lay the enemy's ſpoils at his feet, and with a modeſt air inſinuated, that what he did was entirely from a ſpirit of hereditary virtue. But he was ſoon dreadfully made ſenſible of his error, when his father, turning away, ordered him to be led publicly forth before the army, and there to have his head ſtruck of on account of his diſobeying orders. The whole army was ſtruck with horror at this unnatural mandate: fear for a while kept them in ſuſpenſe; but when they ſaw their young champion's head ſtruck off, and his blood ſtreaming upon the ground, they could no longer contain their execrations and their groans. His dead body was carried forth without the camp, and being adorned with the ſpoils of the vanquiſhed enemy, was buried with all the pomp of military diſtreſs. Rome.

In the mean time, the battle joined with mutual fury; and as the two armies had often fought under the ſame leaders, they combated with all the animoſity of a civil war. The Latins chiefly depended on their bodily ſtrength; the Romans, on their invincible courage and conduct. Forces ſo nearly matched ſeemed only to require the protection of the deities to turn the ſcale of victory; and, in fact, the augurs had foretold, that whatever part of the Roman army ſhould be diſtreſſed, the commander of that part ſhould devote himſelf for his country, and die as a ſacrifice to the immortal gods. Manlius commanded the right wing, and Decius led on the left. Both ſides fought for ſome time with doubtful ſucceſs, as their courage was equal; but, after a time, the left wing of the Roman army began to give ground. It was then that Decius, who commanded there, reſolved to devote himſelf for his country, and to offer his own life as an atonement to ſave his army. Thus determined, he called out to Manlius with a loud voice, and demanded his inſtructions, as he was the chief pontiff, how to devote himſelf, and the form of the words he ſhould uſe. By his directions, therefore, being clothed in a long robe, his head covered, and his arms ſtretched forward, ſtanding upon a javelin, he devoted himſelf to the celeſtial and infernal gods for the ſafety of Rome. Then arming himſelf, and mounting on horſeback, he drove furiouſly into the midſt of the enemy, carrying terror and conſternation wherever he came, till he fell covered with wounds. In the mean time, the Roman army conſidered his devoting himſelf in this manner as an aſſurance of ſucceſs; nor was the ſuperſtition of the Latins leſs powerfully influenced by his reſolution; a total rout began to enſue: the Romans preſſed them on every ſide; and ſo great was the carnage, that ſcarce a fourth part of the enemy ſurvived the defeat. This was the laſt battle of any conſequence that the Latins had with the Romans: they were forced to beg a peace upon hard conditions; and two years after, their ſtrongeſt city, Pædum, being taken, they were brought under an entire ſubmiſſion to the Roman power. 353 A bloody battle with the Latins, 354 Who are totally defeated and ſubdued.

A ſignal diſgrace which the Romans ſuſtained about this time in their conteſt with the Samnites, made a pauſe in their uſual good fortune, and turned the ſcale for a while in the enemy's favour. The ſenate having denied the Samnites peace, Pontius their general was reſolved to gain by ſtratagem what he had frequently loſt by force. Accordingly, leading his army into a defile called *Claudium*, and taking poſſeſſion of all its outlets, he ſent 10 of his ſoldiers, habited like ſhepherds, with directions to throw themſelves in the way the Romans were to march. The Roman conſul met them, and taking them for what they appeared, demanded the route the Samnite army had taken; they, with ſeeming indifference, replied, that they were gone to Luceria, a town

Rome. town in Apulia, and were then actually beſieging it. The Roman general, not ſuſpecting the ſtratagem that was laid againſt him, marched directly by the ſhorteſt road, which lay through the defiles, to relieve the city; and was not undeceived till he ſaw his army ſurrounded, and blocked up on every ſide. Pontius thus having the Romans entirely in his power, firſt obliged the army to paſs under the yoke, having been previouſly ſtripped of all but their garments; he then ſtipulated that they ſhould wholly quit the territories of the Samnites, and that they ſhould continue to live upon terms of former confederacy. The Romans were conſtrained to ſubmit to this ignominious treaty, and marched into Capua diſarmed and half naked. When the army arrived at Rome, the whole city was moſt ſurpriſingly afflicted at their ſhameful return; nothing but grief and reſentment was to be ſeen, and the whole city was put into mourning.

But this was a tranſitory calamity; the war was carried on as uſual for many years; the power of the Samnites declining every day, while that of the Romans continually increaſed. Under the conduct of Papirius Curſor, who was at different times conſul and dictator, repeated triumphs were gained. Fabius Maximus alſo had his ſhare in the glory of conquering them; and Decius, the ſon of that Decius whom we ſaw devoting himſelf for his country about 40 years before, followed the example of his father, and ruſhed into the midſt of the enemy, imagining that he could ſave the lives of his countrymen with the loſs of his own.

155 Pyrrhus king of Epirus invited into Italy by the Tarentines.

The ſucceſs of the Romans againſt the Samnites alarmed all Italy. The Tarentines in particular, who had long plotted underhand againſt the republic, now openly declared themſelves; and invited into Italy Pyrrhus king of Epirus, in hopes of being able by his means to ſubdue the Romans. The offer was readily accepted by that ambitious monarch, who had nothing leſs in view than the conqueſt of all Italy.—Their ambaſſadors carried magnificent preſents for the king, with inſtructions to acquaint him, that they only wanted a general of fame and experience; and that, as for troops, they could themſelves furniſh a numerous army of 20,000 horſe and 350,000 foot, made up of Lucanians, Meſſapians, Samnites, and Tarentines. As ſoon as the news of this deputation were brought to the Roman camp, Æmilius, who had hitherto made war on the Tarentines but gently, in hopes of adjuſting matters by way of negociation, took other meaſures, and began to commit all ſorts of hoſtilities. He took cities, ſtormed caſtles, and laid the whole country waſte, burning and deſtroying all before him. The Tarentines brought their army into the field; but Æmilius ſoon obliged them to take refuge within their walls. However, to induce them to lay aſide the deſign of receiving Pyrrhus, he uſed the priſoners he had taken with great moderation, and even ſent them back without ranſom. Theſe highly extolled the generoſity of the conſul, inſomuch that many of the inhabitants were brought over to the Roman party, and they all began to repent of their having rejected a peace and ſent for Pyrrhus.

But, in the mean time, the Tarentine ambaſſadors arriving in Epirus, purſuant to the powers they had received, made an abſolute treaty with the king; who immediately ſent before him the famous Cyneas, with 3000 men, to take poſſeſſion of the citadel of Tarentum. This eloquent miniſter ſoon found means to depoſe Agis, whom the Tarentines had choſen to be their general and the governor of the city, though a ſincere friend to the Romans. He likewiſe prevailed upon the Tarentines to deliver up the citadel into his hands; which he no ſooner got poſſeſſion of, than he diſpatched meſſengers to Pyrrhus, ſoliciting him to haſten his departure for Italy. In the mean time, the conſul Æmilius, finding that he could not attempt any thing with ſucceſs againſt the Tarentines this campaign, reſolved to put his troops into winter-quarters in Apulia, which was not far from the territory of Tarentum, that was ſoon to become the ſeat of the war. As he was obliged to paſs through certain defiles, with the ſea on one ſide and high hills on the other, he was there attacked by the Tarentines and Epirots from great numbers of barks fraught with baliſtæ (that is, engines for throwing ſtones of a vaſt weight), and from the hills, on which were poſted a great many archers and ſlingers. Hereupon Æmilius placed the Tarentine priſoners between him and the enemy; which the Tarentines perceiving, ſoon left off moleſting the Romans, out of compaſſion to their own countrymen; ſo that the Romans arrived ſafe in Apulia, and there took up their winter-quarters. Rome.

The next year Æmilius was continued in the command of his own troops, with the title of *proconſul*; and was ordered to make war upon the Salentines, who had declared for the Tarentines. The preſent exigence of affairs obliged the Romans to enliſt the proletarii, who were the meaneſt of the people, and therefore by way of contempt called *proletarii*, as being thought incapable of doing the ſtate any other ſervice than that of peopling the city, and ſtocking the republic with ſubjects. Hitherto they had never been ſuffered to bear arms; but were now, to their great ſatisfaction, enrolled as well as others. In the mean time Pyrrhus arrived at Tarentum, having narrowly eſcaped ſhipwreck; and being conducted into the city by his faithful Cyneas, was received there with loud acclamations.

156 Pyrrhus obliges the Tarentines to learn the art of war.

The Tarentines, who were entirely devoted to their pleaſures, expected that he ſhould take all the fatigues of the war on himſelf, and expoſe only his Epirots to danger. And indeed Pyrrhus for ſome days diſſembled his deſign, and ſuffered the Tarentines to indulge without reſtraint in their uſual diverſions. But his ſhips, which had been diſperſed all over the Ionian ſea, arriving one after another, and with them the troops which he had put on board at Epirus, he began to reform the diſorders that prevailed in the city. The theatre was the place to which the idle Tarentines reſorted daily in great numbers, and where the incendiaries ſtirred up the people to ſedition with their harangues: he therefore cauſed it to be ſhut up, as he did likewiſe the public gardens, porticoes, and places of exerciſe, where the inhabitants uſed to entertain themſelves with news, and ſpeak with great freedom of their governors, cenſuring their conduct, and ſettling the government according to their different humours, which occaſioned great diviſions, and rent the city into various factions. As they were a very voluptuous and indolent people, they ſpent whole days and nights in feaſts, maſquerades, plays, &c. Theſe therefore Pyrrhus abſolutely

Rome. totally prohibited, as no leſs dangerous than the aſſemblies of prating politicians. They were utter ſtrangers to military exerciſes, and the art of handling arms; but Pyrrhus having cauſed an exact regiſter to be made of all the young men who were fit for war, picked out the ſtrongeſt among them, and incorporated them among his own troops, ſaying, that he would take it upon himſelf to give them courage. He exerciſed them daily for ſeveral hours; and on that occaſion behaved with an inexorable ſeverity, inflicting exemplary puniſhment on ſuch as did not attend or failed in their duty. By theſe wiſe meaſures he prevented ſeditions among the citizens, and inured their youth to military diſcipline; and becauſe many, who had not been accuſtomed to ſuch ſeverity and rigour, withdrew from their native country, Pyrrhus by a public proclamation, declared all thoſe capitally guilty who ſhould attempt to abandon their country, or abſent themſelves from the common muſters.

The Tarentines, being now ſenſible that Pyrrhus was determined to be their maſter, began loudly to complain of his conduct; but he, being informed of whatever paſſed among them by his ſpies, who inſinuated themſelves into all companies, privately diſpatched the moſt factious, and ſent thoſe whom he ſuſpected, under various pretences, to his ſon's court in Epirus.

In the mean time, P. Valerius Lævinus, the Roman conſul, entering the country of the Lucanians, who were in alliance with the Tarentines, committed great ravages there; and having taken and fortified one of their caſtles, waited in that neighbourhood for Pyrrhus. The king, though he had not yet received any ſuccours from the Samnites, Meſſapians, and other allies of the Tarentines, thought it highly diſhonourable to continue ſhut up in a city, while the Romans were ravaging the country of his friends. He therefore took the field with the troops he had brought with him from Epirus, ſome recruits of Tarentum, and a ſmall number of Italians. But before he began hoſtilities, he wrote a letter to Lævinus, commanding him to diſband his army; and on his refuſal, immediately marched towards thoſe parts where Lævinus was waiting for him. The Romans were encamped on the hither ſide of the river Siris; and Pyrrhus appearing on the oppoſite bank, made it his firſt buſineſs to reconnoitre the enemy's camp in perſon, and ſee what appearance they made. With this view he croſſed the river, attended by Megacles, one of his officers and chief favourites; and having obſerved the conſul's intrenchments, the manner in which he had poſted his advanced guards, and the good order of his camp, he was greatly ſurpriſed; and addreſſing Megacles, "Theſe people (ſaid he) are not ſuch barbarians as we take them to be: let us try them before we condemn them." On his return, he changed his reſolution of attacking them; and, ſhutting himſelf up in his intrenchments, waited for the arrival of the confederate troops. In the mean time, he poſted ſtrong guards along the river, to prevent the enemy from paſſing it, and continually ſent out ſcouts to diſcover the deſigns, and watch the motions of the conſul. Some of theſe being taken by the advanced guards of the Romans, the conſul himſelf led them through his camp, and having ſhewed them his army, ſent them back to the king, telling them, that he had many other troops to ſhow them in due time.

Lævinus being determined to draw the enemy to a battle before Pyrrhus received the reinforcements he expected, having harangued his troops, marched to the banks of the Siris; and there drawing up his infantry in battalia, ordered the cavalry to file off, and march a great way about, in order to find a paſſage at ſome place not defended by the enemy. Accordingly, they paſſed the river without being obſerved; and falling upon the guards which Pyrrhus had poſted on the banks over-againſt the conſular army, gave the infantry an opportunity of croſſing the river on bridges which Lævinus had prepared for that purpoſe. But before they got over, Pyrrhus, haſtening from his camp, which was at ſome diſtance from the river, hoped to cut the Roman army in pieces while they were diſordered with the difficulties of paſſing the river, and climbing up the ſteep banks; but the cavalry covering the infantry, and ſtanding between them and the Epirots, gave them time to form themſelves on the banks of the river. On the other hand, Pyrrhus drew up his men as faſt as they came from the camp, and performed ſuch deeds of valour, that the Romans thought him worthy of the great reputation he had acquired. Rome. 157 His firſt battle with the Romans.

As the cavalry alone had hitherto engaged, Pyrrhus, who confided moſt in his infantry, haſtened back to the camp, in order to bring them to the charge; but took two precautions before he began the attack: the firſt was, to ride through the ranks, and ſhow himſelf to the whole army; for his horſe having been killed under him in the firſt onſet, a report had been ſpread that he was ſlain: the ſecond was, to change his habit and helmet with Megacles; for having been known in the engagement of the horſe by the richneſs of his attire and armour, many of the Romans had aimed at him in particular, ſo that he was with the utmoſt difficulty taken and ſaved, after his horſe had been killed under him. Thus diſguiſed, he led his phalanx againſt the Roman legions, and attacked them with incredible fury. Lævinus ſuſtained the ſhock with great reſolution, ſo that the victory was for many hours warmly diſputed. The Romans gave ſeveral times way to the Epirots, and the Epirots to the Romans; but both parties rallied again, and were brought back to the charge by their commanders. Megacles, in the attire and helmet of Pyrrhus, was in all places, and well ſupported the character he had aſſumed. But his diſguiſe at laſt proved fatal to him: for a Roman knight, by name *Dexter*, taking him for the king, followed him wherever he went; and having found an opportunity of diſcharging a blow at him, ſtruck him dead on the ſpot, ſtripped him of his helmet and armour, and carried them in triumph to the conſul, who by ſhowing to the Epirots the ſpoils of their king, ſo terrified them, that they began to give ground. But Pyrrhus, appearing bare-headed in the firſt files of his phalanx, and riding through all the lines, undeceived his men, and inſpired them with new courage.

The advantage ſeemed to be pretty equal on both ſides, when Lævinus ordered his cavalry to advance; which Pyrrhus obſerving drew up 20 elephants in the front of his army, with towers on their backs full of bowmen. The very ſight of thoſe dreadful animals chilled the bravery of the Romans, who had never before ſeen any. However, they ſtill advanced, till their horſes, not being able to bear the ſmell of them, and frightened

Rome. frightened at the ſtrange noiſe they made, either threw their riders, or carried them on full ſpeed in ſpite of their utmoſt efforts. In the mean time, the archers, diſcharging ſhowers of darts from the towers, wounded ſeveral of the Romans in that confuſion, while others were trod to death by the elephants. Notwithſtanding the diſorder of the cavalry, the legionaries ſtill kept their ranks, and could not be broken, till Pyrrhus attacked them in perſon at the head of the Theſſalian horſe. The onſet was ſo furious, that they were forced to yield, and retire in diſorder. The king of Epirus reſtrained the ardour of his troops, and would not ſuffer them to purſue the enemy: an elephant, which had been wounded by a Roman ſoldier, named *Minucius*, having cauſed a great diſorder in his army, this accident favoured the retreat of the Romans, and gave them time to repaſs the river, and take refuge in Apulia. The Epirot remained maſter of the field and had the pleaſure to ſee the Romans fly before him: but the victory coſt him dear, a great number of his beſt officers and ſoldiers having been ſlain in the battle; whence he was heard to ſay after the action, that he was both conquered and conquered, and that if he gained ſuch another victory, he ſhould be obliged to return to Epirus alone.

158 The Romans defeated.

His firſt care after the action was to bury the dead, with which the plain was covered; and herein he made no diſtinction between the Romans and his own Epirots. In viewing the bodies of the former, he obſerved, that none of them had received diſhonourable wounds; that they had all fallen in the poſts aſſigned them, ſtill held their ſwords in their hands, and ſhowed, even after death, a certain martial air and fierceneſs in their faces; and on this occaſion it was that he uttered theſe famous words: "O that Pyrrhus had the Romans for his ſoldiers, or the Romans Pyrrhus for their leader! together, we ſhould ſubdue the whole world."

159 Pyrrhus reduces ſeveral towns.

The king of Epirus underſtood the art of war too well not to reap what advantage he could from his victory. He broke into the countries in alliance with the Romans, plundered the lands of the republic, and made incurſions even into the neighbourhood of Rome. Many cities opened their gates to him, and in a ſhort time he made himſelf maſter of the greateſt part of Campania. While he was in that fruitful province, ſubſiſting his troops there at the expence of the Romans, he was joined by the Samnites, Lucanians, and Meſſapians, whom he had ſo long expected. After having reproached them for their delay, he gave them a good ſhare of the ſpoils he had taken from the enemy; and having by this means gained their affections, he marched without loſs of time to lay ſiege to Capua: but Lævinus, having already received a reinforcement of two legions, threw ſome troops into the city; which obliged Pyrrhus to drop his deſign, and, leaving Capua, to march ſtraight to Naples. Lævinus followed him, haraſſing his troops on their march; and at length, by keeping his army in the neighbourhood, forced him to give over all thoughts of making himſelf maſter of that important city. The king then, all on a ſudden, took his route towards Rome by the Latin way, ſurpriſed Fregellæ, and, marching through the country of the Hernici, ſat down before Præneſte. There, from the top of an hill, he had the pleaſure of ſeeing Rome; and is ſaid to have advanced ſo near the walls, that he drove a cloud of duſt into the city. But he was ſoon forced to retire by the other conſul T. Coruncanius, who, having reduced Hetruria, was juſt then returned with his victorious army to Rome. The king of Epirus, therefore, having no hopes of bringing the Hetrurians into his intereſt, and ſeeing two conſular armies ready to fall upon him, raiſed the ſiege of Præneſte, and haſtened back into Campania; where, to his great ſurpriſe, he found Lævinus with a more numerous army than that which he had defeated on the banks of the Siris. The conſul went to meet him, with a deſign to try the fate of another battle; which Pyrrhus being unwilling to decline, drew up his army, and, to ſtrike terror into the Roman legions, ordered his men to beat their bucklers with their lances, and the leaders of the elephants to force them to make a hideous noiſe. But the noiſe was returned with ſuch an univerſal ſhout by the Romans, that Pyrrhus, thinking ſo much alacrity on the part of the vanquiſhed too ſure a prognoſtic of victory, altered his mind; and, pretending that the auguries were not favourable, retired to Tarentum, and put an end to the campaign. Rome.

160 He inclines to peace.

While Pyrrhus continued quiet at Tarentum, he had time to reflect on the valour and conduct of the Romans; which made him conclude, that the war in which he was engaged muſt end in his ruin and diſgrace, if not terminated by an advantageous peace. He was therefore overjoyed when he heard that the ſenate had determined to ſend an honourable embaſſy to him, not doubting but their errand was to propoſe terms of peace. The ambaſſadors were three men of diſtinguiſhed merit; to wit, Cornelius Dolabella, who was famous for the ſignal victory he had gained over the Senones, Fabricius, and Æmilius Pappus, who had been his colleague in the conſulate two years before. When they were admitted to an audience, the only thing they demanded was a ſurrender of the priſoners, either by the way of exchange, or at ſuch a ranſom as ſhould be agreed on; for Pyrrhus, in the late battle, had made 1800 priſoners, moſt of them Roman knights and men of diſtinction in the republic. They had fought with great bravery, till their horſes, frightened with the roaring of the king's elephants, had either thrown them, or obliged them to diſmount; by which unforeſeen accident they had fallen into the enemy's hands. The ſenate, therefore, pitying the condition of thoſe brave men, had determined, contrary to their cuſtom, to redeem them. Pyrrhus was greatly ſurpriſed and diſappointed when he found that they had no other propoſals to make; but, concealing his thoughts, he only anſwered that he would conſider of it, and let them know his reſolution. Accordingly, he aſſembled his council: but his chief favourites were divided in their opinions. Milo, who commanded in the citadel of Tarentum, was for coming to no compoſition with the Romans; but Cyneos, who knew his maſter's inclination, propoſed not only ſending back the priſoners without ranſom, but diſpatching an embaſſy to Rome to treat with the ſenate of a laſting peace. His advice was approved, and he himſelf appointed to go on that embaſſy. After theſe reſolutions, the king acquainted the ambaſſadors, that he intended to releaſe the priſoners without ranſom, ſince he had already riches enough, and deſired

Rome. fired nothing of the republic but her friendſhip. Afterwards he had ſeveral conferences with Fabricius, whoſe virtue he had tried with mighty offers of riches and grandeur; but finding him proof againſt all temptations, he reſolved to try whether his intrepidity and courage were equal to his virtue. With this view, he cauſed an elephant to be placed behind a curtain in the hall where he received the Roman ambaſſador. As Fabricius had never ſeen one of thoſe beaſts, the king, taking a turn or two in the hall with him, brought him within the elephant's reach, and then cauſed the curtain to be drawn all on a ſudden, and that monſtrous animal to make his uſual noiſe, and even lay his trunk on Fabricius's head. But the intrepid Roman, without betraying the leaſt fear or concern, "Does the great king (ſaid he, with ſurpriſing calmneſs), who could not ſtagger me with his offers, think to frighten me with the braying of a beaſt?" Pyrrhus, aſtoniſhed at his immoveable conſtancy, invited him to dine with him; and on this occaſion it was, that the converſation turning upon Epicurean philoſophy, Fabricius made that celebrated exclamation, "O that Pyrrhus, both for Rome's ſake and his own, had placed his happineſs in the boaſted indolence of Epicurus."

Every thing Pyrrhus heard or ſaw of the Romans increaſed his earneſtneſs for peace. He ſent for the three ambaſſadors, releaſed 200 of the priſoners without ranſom, and ſuffered the reſt, on their parole, to return to Rome to celebrate the Saturnalia, or feaſts of Saturn, in their own families. Having by this obliging behaviour gained the good will of the Roman ambaſſadors, he ſent Cyneas to Rome, almoſt at the ſame time that they left Tarentum. The inſtructions he gave this faithful miniſter, were, to bring the Romans to grant theſe three articles: 1. That the Tarentines ſhould be included in the treaty made with the king of Epirus. 2. That the Greek cities in Italy ſhould be ſuffered to enjoy their laws and liberties. 3. That the republic ſhould reſtore to the Samnites, Lucanians, and Bruttians, all the places ſhe had taken from them. Upon theſe conditions, Pyrrhus declared himſelf ready to forbear all further hoſtilities, and conclude a laſting peace. With theſe inſtructions Cyneas ſet out for Rome; where, partly by his eloquence, partly by rich preſents to the ſenators and their wives, he ſoon gained a good number of voices. When he was admitted into the ſenate, he made an harangue worthy of a diſciple of the great Demoſthenes; after which he read the conditions Pyrrhus propoſed, and, with a great deal of eloquence, endeavouring to ſhew the reaſonableneſs and moderation of his maſter's demands, aſked leave for Pyrrhus to come to Rome to conclude and ſign the treaty. The ſenators were generally inclined to agree to Pyrrhus's terms; but nevertheleſs, as ſeveral ſenators were abſent, the determination of the affair was poſtponed to the next day; when Appius Claudius, the greateſt orator and moſt learned civilian in Rome, old and blind as he was, cauſed himſelf to be carried to the ſenate, where he had not appeared for many years; and there, partly by his eloquence, partly by his authority, ſo prepoſſeſſed the minds of the ſenators againſt the king of Epirus, and the conditions he offered, that, when he had done ſpeaking, the conſcript fathers unanimouſly paſſed a decree, the ſubſtance of which was, That the war with Pyrrhus

161 The Romans refuſe to treat.

ſhould be continued; that his ambaſſador ſhould be ſent back that very day; that the king of Epirus ſhould not be permitted to come to Rome; and that they ſhould acquaint his ambaſſador, that Rome would enter into no treaty of peace with his maſter till he had left Italy. Rome.

Cyneas, ſurpriſed at the anſwer given him, left Rome the ſame day, and returned to Tarentum, to acquaint the king with the final reſolution of the ſenate. Pyrrhus would have willingly concluded a peace with them upon honourable terms; but, as the conditions they offered were not by any means conſiſtent with the reputation of his arms, he began, without loſs of time, to make all due preparations for the next campaign. On the other hand, the Romans having raiſed to the conſulate P. Sulpicius Saverrio, and P. Decius Mus, diſpatched them both into Apulia, where they found Pyrrhus encamped near a little town called *Aſculum*. There the conſuls, joining their armies, fortified themſelves at the foot of the Appennines, having between them and the enemy a large deep ſtream which divided the plain. Both armies continued a great while on the oppoſite banks, before either ventured to paſs over to attack the other. The Epirots allowed the Romans to croſs the ſtream, and draw up on the plain. On the other hand, Pyrrhus placed his men likewiſe in order of battle in the ſame plain; and all the ancients do him the juſtice to ſay, that no commander ever underſtood better the art of drawing up an army and directing its motions. In the right wing he placed his Epirots and the Samnites; in his left the Lucanians, Bruttians and Salentines; and his phalanx in the centre. The centre of the Roman army conſiſted of four legions, which were to engage the enemy's phalanx; on their wings were poſted the light-armed auxiliaries and the Roman horſe. The conſuls, in order to guard their troops againſt the fury of the elephants had prepared chariots, armed with long points of iron in the ſhape of forks, and filled with ſoldiers carrying firebrands, which they were directed to throw at the elephants, and by that means frighten them, and ſet their wooden towers on fire. Theſe chariots were poſted over-againſt the king's elephants, and ordered not to ſtir till they entered upon action. To this precaution the Roman generals added another, which was, to direct a body of Apulians to attack Pyrrhus's camp in the heat of the engagement, in order to force it, or at leaſt to draw off part of the enemy's troops to defend it. At length the attack began, both parties being pretty equal in number; for each of them conſiſted of about 40,000 men. The phalanx ſuſtained, for a long time, the furious onſet of the legions with incredible bravery: but at length being forced to give way, Pyrrhus commanded his elephants to advance, but not on the ſide where the Romans had poſted their chariots; they marched round, and falling upon the Roman horſe, ſoon put them into confuſion. Then the phalanx, returning with freſh courage to the charge, made the Roman legions in their turn give ground. On this occaſion Decius was killed, ſo that one conſul only was left to command the two Roman armies. But while all things ſeemed to favour Pyrrhus, the body of Apulians which we have mentioned above, falling unexpectedly on the camp of the Epirots, obliged the king to diſpatch a ſtrong detachment to defend his intrenchments.

162 Another battle.

Upon

Rome.

Upon the departure of these troops, some of the Epirots, imagining that the camp was taken, began to lose courage, and retire; those who were next to them followed their example, and in a short time the whole army gave way. Pyrrhus having attempted several times in vain to rally his forces, returned to the charge with a small number of his friends and the most courageous of his officers. With these he sustained the fury of the victorious legions, and covered the retreat of his own men. But being, after a most gallant behaviour, dangerously wounded, he retired at last with his small band in good order, leaving the Romans masters of the field. As the sun was near setting, the Romans, being extremely fatigued, and a great number of them wounded, the consul Sulpicius, not thinking it advisable to pursue the enemy, sounded a retreat, repassed the stream, and brought his troops back to the camp. Sulpicius appeared in the field of battle the next day, with a design to bring the Epirots to a second engagement; but finding they had withdrawn in the night to Tarentum, he likewise retired, and put his troops into winter-quarters in Apulia.

163 Pyrrhus defeated, and dangerously wounded.

Both armies continued quiet in their quarters during winter; but early in the spring took the field anew.—The Romans were commanded this year by two men of great fame, whom they had raised to the consulate the second time: these were the celebrated C. Fabricias and Q. Æmilius Pappus; who no sooner arrived in Apulia, then they led their troops into the territory of Tarentum. Pyrrhus, who had received considerable reinforcements from Epirus, met them near the frontiers, and encamped at a small distance from the Roman army. While the consuls were waiting here for a favourable opportunity to give battle, a messenger from Nicias, the king's physician, delivered a letter to Fabricius; wherein the traitor offered to take off his master by poison, provided the consul would promise him a reward proportionable to the greatness of the service. The virtuous Roman, being filled with horror at the bare proposal of such a crime, immediately communicated the affair to his colleague; who readily joined with him in writing a letter to Pyrrhus, wherein they warned him, without discovering the criminal, to take care of himself, and be upon his guard against the treacherous designs of those about him. Pyrrhus, out of a deep sense of gratitude for so great a benefit, released immediately, without ransom, all the prisoners he had taken. But the Romans, disdaining to accept either a favour from an enemy, or a recompence for not committing the blackest treachery, declared, that they would not receive their prisoners but by way of exchange; and accordingly sent to Pyrrhus an equal number of Samnite and Tarentine prisoners.

164 The king's physician offers to poison him but is discovered by the Romans.

As the king of Epirus grew every day more weary of a war which he feared would end in his disgrace, he sent Cyneas a second time to Rome, to try whether he could, with his artful harangues, prevail upon the conscript fathers to hearken to an accommodation, upon such terms as were consistent with his honour. But the ambassador found the senators steady in their former resolution, and determined not to enter into a treaty with his master till he had left Italy, and withdrawn from thence all his forces. This gave the king great uneasiness; for he had already lost most of his veteran troops and best officers, and was sensible that he should lose the rest if he ventured another engagement. While he was revolving these melancholy thoughts in his mind, ambassadors arrived at his camp from the Syracusians, Agrigentines, and Leontines, imploring the assistance of his arms to drive out the Carthaginians, and put an end to the troubles which threatened their respective states with utter destruction. Pyrrhus, who wanted only some honourable pretence to leave Italy, laid hold of this; and appointing Milo governor of Tarentum, with a strong garrison to keep the inhabitants in awe during his absence, he set sail for Sicily with 30,000 foot and 2500 horse, on board a fleet of 200 ships. Here he was at first attended with great success; but the Sicilians, disgusted at the resolution he had taken of passing over into Africa, and much more at the enormous exactions and extortions of his ministers and courtiers, had submitted partly to the Carthaginians and partly to the Mamertines. When Carthage heard of this change, new troops were raised all over Africa, and a numerous army sent into Sicily to recover the cities which Pyrrhus had taken. As the Sicilians daily deserted from him in crowds, he was no way in a condition, with his Epirots alone, to withstand so powerful an enemy; and therefore, when deputies came to him from the Tarentines, Samnites, Bruttians, and Lucanians, representing to him the losses they had sustained since his departure, and remonstrating, that, without his assistance, they must fall a sacrifice to the Romans, he laid hold of that opportunity to abandon the island, and return to Italy. His fleet was attacked by that of Carthage; and his army, after their landing, by the Mamertines. But Pyrrhus having, by his heroic bravery, escaped all danger, marched along the sea shore, in order to reach Tarentum that way. As he passed through the country of the Locrians, who had not long before massacred the troops he had left there, he not only exercised all sorts of cruelty on the inhabitants, but plundered the temple of Proserpine to supply the wants of his army. The immense riches which he found there, were, by his order, sent to Tarentum by sea; but the ships that carried them being dashed against the rocks by a tempest, and the mariners all lost, this proud prince was convinced, says Livy, that the gods were not imaginary beings, and caused all the treasure, which the sea had thrown upon the shore, to be carefully gathered up, and replaced in the temple: nay, to appease the wrath of the angry goddess, he put all those to death who had advised him to plunder her temple. However, superstition made the ancients ascribe to this act of impiety all the misfortunes which afterwards befel that unhappy prince.

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165 Pyrrhus goes into Sicily.

166 He returns into Italy.

Pyrrhus at length arrived at Tarentum; but of the army he had carried into Sicily, he brought back into Italy only 2000 horse and not quite 20,000 foot. He therefore reinforced them with the best troops he could raise in the countries of the Samnites, Lucanians, and Bruttians; and hearing that the two new consuls, Curius Dentatus and Cornelius Lentulus, had divided their forces, the one invading Lucania and the other Samnium, he likewise divided his army into two bodies, marching with the choice of his Epirots against Dentatus, in hopes of surprising him in his camp near Beneventum. But the consul having notice of his approach, went out of his intrenchments with a strong detachment of legionaries to meet him; repulsed his van-

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van-guard, put many of the Epirots to the ſword, and took ſome of their elephants. Curius encouraged with this ſucceſs, marched his army into the Taurafian fields, and drew it up in a plain which was wide enough for his troops, but too narrow for the Epirot phalanx, the phalangites being ſo crowded that they could not handle their arms without difficulty. But the king's eagerneſs to try his ſtrength and ſkill with ſo renowned a commander, made him engage at that great diſadvantage. Upon the firſt ſignal the action began; and one of the king's wings giving way, the victory ſeemed to incline to the Romans. But that wing where the king fought in perſon repulſed the enemy, and drove them back quite to their intrenchments. This advantage was in great part owing to the elephants; which Curius perceiving, commanded a corps de reſerve, which he had poſted near the camp, to advance and fall upon the elephants. Theſe carrying burning torches in one hand, and their ſwords in the other, threw the former at the elephants, and with the latter defended themſelves againſt their guides; by which means they were both forced to give way. The elephants being put to flight broke into the phalanx, cloſe as it was, and there cauſed a general diſorder; which was increaſed by a remarkable accident: for it is ſaid, that a young elephant being wounded, and thereupon making a dreadful noiſe, the mother quitting her rank, and haſtening to the aſſiſtance of her young one, put thoſe who ſtill kept their ranks into the utmoſt confuſion. But, however that be, it is certain that the Romans obtained at laſt a complete victory. Oroſius and Eutropius tell us that Pyrrhus's army conſiſted of 80,000 foot and 6000 horſe, including his Epirots and allies; whereas the conſular army was ſcarce 20,000 ſtrong. Thoſe who exaggerate the king's loſs ſay, that the number of the dead on his ſide amounted to 30,000 men; but others reduce it to 20,000. All writers agree, that Curius took 1200 priſoners and eight elephants. This victory, which was the moſt deciſive Rome had ever gained, brought all Italy under ſubjection, and paved the way for thoſe vaſt conqueſts which afterwards made the Romans maſters of the whole known world.

167 Is utterly defeated by Curius Dentatus.

168 He evacuates his allies,

Pyrrhus being no way in a condition, after the great loſs he had ſuſtained, to keep the field, retired to Tarentum, attended only by a ſmall body of horſe, leaving the Romans in full poſſeſſion of his camp; which they ſo much admired, that they made it ever after a model to form theirs by. And now the king of Epirus reſolved to leave Italy as ſoon as poſſible; but concealed his deſign, and endeavoured to keep up the drooping ſpirits of his allies, by giving them hopes of ſpeedy ſuccours from Greece. Accordingly he diſpatched ambaſſadors into Ætolia, Illyricum, and Macedon, demanding ſupplies of men and money. But the anſwers from thoſe courts not proving favourable, he forged ſuch as might pleaſe thoſe whom he was willing to deceive; and by this means ſupported the courage of his friends, and kept his enemy in play. When he could conceal his departure no longer, he pretended to be on a ſudden in a great paſſion at the dilatorineſs of his friends in ſending him ſuccours; and acquainted the Tarentines, that he muſt go and bring them over himſelf. However, he left behind him a ſtrong garriſon in the citadel of Tarentum, under the command of the ſame Milo who had kept it for him during his ſtay in Sicily. In order to keep this governor in his duty, he is ſaid to have made him a very ſtrange preſent, *viz.* a chair covered with the ſkin of Nicias, the treacherous phyſician, who had offered Fabricius to poiſon his maſter. After all theſe diſguiſes and precautions, Pyrrhus at laſt ſet ſail for Epirus, and arrived ſafe at Acroceraunium with 8000 foot and 500 horſe; after having ſpent to no purpoſe ſix years in Italy and Sicily.

Though, from the manner in which Pyrrhus took his leave, his Italian allies had little reaſon to expect any further aſſiſtance from him, yet they continued to amuſe themſelves with vain hopes, till certain accounts arrived of his being killed at the ſiege of Argos, as has been related under the article Epirus. This threw the Samnites into deſpair: ſo that they put all to the iſſue of a general battle; in which they were defeated with ſuch dreadful ſlaughter, that the nation is ſaid to have been almoſt exterminated. This overthrow was ſoon followed by the ſubmiſſion of the Lucanians, Bruttians, Tarentines, Sarcinates, Picentes, and Salentines; ſo that Rome now became miſtreſs of all the nations from the remoteſt parts of Hetruria to the Ionian ſea, and from the Tyrrhenian ſea to the Adriatic. All theſe nations, however, did not enjoy the ſame privileges. Some were entirely ſubject to the republic, and had no laws but what they received from thence; others retained their old laws and cuſtoms, but in ſubjection to the republic: ſome were tributary; and others allies, who were obliged to furniſh troops at their own expence when the Romans required. Some had the privilege of Roman citizenſhip, their ſoldiers being incorporated in the legions; while others had a right of ſuffrage in the elections made by the centuries. Theſe different degrees of honour, privileges, and liberty, were founded on the different terms granted to the conquered nations when they ſurrendered, and were afterwards increaſed according to their fidelity and the ſervices they did the republic.

169 Who are ſubdued, and the Romans become maſters of all Italy.

The Romans now became reſpected by foreign nations, and received ambaſſadors from Ptolemy Philadelphus king of Egypt, and from Apollonia a city of Macedon. Senſible of their own importance, they now granted protection to whatever nation requeſted it of them; but this not with a view of ſerving one party, but that they might have an opportunity of ſubjecting both. In this manner they aſſiſted the Mamertines againſt Hiero king of Syracuſe, which brought on the wars with the Carthaginians, which terminated in the total deſtruction of that ancient republic, as has been related under the article Carthage. The interval between the firſt and ſecond Punic wars was by the Romans employed in reducing the Boii and Ligurians, who had revolted. Theſe were Gauliſh nations, and had always been very formidable to the Romans, who now gave one of their conſuls a notable defeat. However, he ſoon after ſufficiently revenged himſelf, and defeated the enemy with great ſlaughter; though it was not till ſome time after, and with a good deal of difficulty, that they were totally ſubdued. During this interval alſo, the Romans ſeized on the iſlands of Sardinia, Corſica, and Malta; and in the year 219 B. C. the two former were reduced to the form of a province. Papirius, who had ſubdued Corſica, demanded a triumph; but not having intereſt enough to obtain it, he took a method entirely new to do himſelf juſtice. He put him-

173 Other conqueſts made by the Romans.

Rome. himſelf at the head of his victorious army, and marched to the temple of Jupiter Latialis, on the hill of Alba, with all the pomp that attended triumphant victors at Rome. He made no other alteration in the ceremony, but that of wearing a crown of myrtle inſtead of a crown of laurel, and this on account of his having defeated the Corſicans in a place where there was a grove of myrtles. The example of Papirius was afterwards followed by a great many generals to whom the ſenate refuſed triumphs.

171 Illyricum ſubdued. The next year, when M. Æmilius Barbula and M. Junius Pera were conſuls, a new war ſprung up in a kingdom out of Italy. *Illyricum*, properly ſo called, which bordered upon Macedon and Epirus, was at this time governed by a woman named *Teuta*, the widow of king Agron, and guardian to her ſon Pinæus, who was under age. The ſucceſs of her late huſband againſt the Ætolians had fluſhed her to ſuch a degree, that, inſtead of ſettling the affairs of her ward in peace, ſhe commanded her ſubjects to cruiſe along the coaſt, ſeize all the ſhips they met, take what places they could, and ſpare no nation. Her pirates had, purſuant to her orders, taken and plundered many ſhips belonging to the Roman merchants; and her troops were then beſieging the iſland of Iſſa in the Adriatic, though the inhabitants had put themſelves under the protection of the republic. Upon the complaints therefore of the Italian merchants, and to protect the people of Iſſa, the ſenate ſent two ambaſſadors to the Illyrian queen, Lucius and Caius Coruncanus, to demand of her that ſhe would reſtrain her ſubjects from infeſting the ſea with pirates. She anſwered them haughtily, that ſhe could only promiſe that her ſubjects ſhould not for the future attack the Romans in her name, and by public authority: "but as for any thing more, it is not cuſtomary with us (ſaid ſhe) to lay reſtraints on our ſubjects, nor will we forbid them to reap thoſe advantages from the ſea which it offers them." "Your cuſtoms then (replied the youngeſt of the ambaſſadors) are very different from ours. At Rome we make public examples of thoſe ſubjects who injure others, whether at home or abroad. Teuta, we can, by our arms, force you to reform the abuſes of your bad government." Theſe unſeaſonable threatenings provoked Teuta, who was naturally a proud and imperious woman, to ſuch a degree, that, without regard to the right of nations, ſhe cauſed the ambaſſadors to be murdered on their return home.

When ſo notorious an infraction of the law of nations was known at Rome, the people demanded vengeance and the ſenate having firſt honoured the manes of the ambaſſadors, by erecting, as was uſual in ſuch caſes, ſtatues three feet high to their memory, ordered a fleet to be equipped, and troops raiſed, with all poſſible expedition. But now Teuta, reflecting on the enormity of her proceedings, ſent an embaſſy to Rome aſſuring the ſenate that ſhe had no hand in the murder of the ambaſſadors, and offering to deliver up to the republic thoſe who had committed that barbarous aſſaſſination. The Romans being at that time threatened with a war from the Gauls, were ready to accept this ſatisfaction: but in the mean time the Illyrian fleet having gained ſome advantage over that of the Achæans, and taken the iſland of Corcyra, near Epirus, this ſucceſs made Teuta believe herſelf invincible, and forget the promiſe ſhe had made to the Romans; nay, ſhe ſent her fleet to ſeize on the iſland of Iſſa, which the Romans had taken under their protection. Rome.

Hereupon the conſuls for the new year, P. Poſthumius Albinius and Cn. Fulvius Centumalus, embarked for Illyricum; Fulvius having the command of the fleet, which conſiſted of 100 galleys; and Poſthumius of the land forces, which amounted to 20,000 foot, beſides a ſmall body of horſe. Fulvius appeared with his fleet before Corcyra in the Adriatic, and was put in poſſeſſion both of the iſland and city by Demetrius of Pharos, governor of the place for Queen Teuta. Nor was this all; Demetrius found means to make the inhabitants of Apollonia drive out the Illyrian garriſon, and admit into their city the Roman troops. As Apollonia was one of the keys of Illyricum on the ſide of Macedon, the conſuls, who had hitherto acted jointly, no ſooner ſaw themſelves in poſſeſſion of it than they ſeparated, the fleet cruiſing along the coaſt, and the army penetrating into the heart of the queen's dominions. The Andyœans, Parthini, and Atintanes, voluntarily ſubmitted to Poſthumius, being induced by the perſuaſions of Demetrius to ſhake off the Illyrian yoke. The conſul being now in poſſeſſion of moſt of the inland towns, returned to the coaſt, where, with the aſſiſtance of the fleet, he took many ſtrong-holds, among which was Nutria, a place of great ſtrength, and defended by a numerous garriſon; ſo that it made a vigorous defence, the Romans having loſt before it a great many private men, ſeveral legionary tribunes, and one quæſter. However, this loſs was repaired by the taking of 40 Illyrian veſſels, which were returning home laden with booty. At length the Roman fleet appeared before Iſſa, which, by Teuta's order, was ſtill cloſely beſieged, notwithſtanding the loſſes ſhe had ſuſtained. However, upon the approach of the Roman fleet, the Illyrians diſperſed; but the Pharians, who ſerved among them, followed the example of their countryman Demetrius, and joined the Romans, to whom the Iſſani readily ſubmitted.

In the mean time Sp. Corvilius and Q. Fabius Maximus being raiſed to the conſulate a ſecond time, Poſthumius was recalled from Illyricum, and refuſed a triumph for having been too prodigal of the Roman blood at the ſiege of Nutria. His colleague Fulvius was appointed to command the land forces in his room, in quality of proconſul. Hereupon Teuta, who had founded great hopes on the change of the conſuls, retired to one of her ſtrong-holds called *Rhizon*, and from thence early in the ſpring ſent an embaſſy to Rome. The ſenate refuſed to treat with her; but granted the young king a peace upon the following conditions: 1. That he ſhould pay an annual tribute to the republic. 2. That he ſhould ſurrender part of his dominions to the Romans. 3. That he ſhould never ſuffer above three of his ſhips of war at a time to ſail beyond Lyſſus, a town on the confines of Macedon and Illyricum. The places he yielded to the Romans in virtue of this treaty, were the iſlands of Corcyra, Iſſa, and Pharos, the city of Dyrrhachium, and the country of the Atintanes. Soon after Teuta, either out of ſhame, or compelled by a ſecret article of the treaty, abdicated the regency, and Demetrius ſucceeded her.

172 The Gauls of Inſubria and Liguria ſubdued alſo. Before this war was ended, the Romans were alarmed by new motions of the Gauls, and the great progreſs which the Carthaginians made in Spain. At this time

Rome. also the fears of the people were excited by a prophecy said to be taken out of the Sybilline books, that the Gauls and Greeks should one day be in possession of Rome. This prophecy, however, the senate found means to elude, as they pretended, by burying two Gauls and two Greeks alive, and then telling the multitude that the Gauls and Greeks were now in the possession of Rome. The difficulties which superstition had raised being thus surmounted, the Romans made vast preparations against the Gauls, whom they seem to have dreaded above all other nations. Some say that the number of forces raised by the Romans on this occasion amounted to no fewer than 800,000 men. Of this incredible multitude 248,000 foot and 26,000 horse were Romans or Campanians; nevertheless, the Gauls, with only 50,000 foot and 20,000 horse, forced a passage through Hetruria, and took the road towards Rome. Here they had the good fortune at first to defeat one of the Roman armies; but being soon after met by two others, they were utterly defeated, with the loss of more than 50,000 of their number. The Romans then entered their country, which they cruelly ravaged; but a plague breaking out in their army, obliged them to return home. This was followed by a new war, in which those Gauls who inhabited Insubria, and Liguria were totally subdued, and their country reduced to a Roman province. These conquests were followed by that of Istria; Dimalum, a city of importance in Illyricum; and Pharos, an island in the Adriatic sea.

The second Punic war for some time retarded the conquest of the Romans, and even threatened their state with entire destruction; but Hannibal being at last recalled from Italy, and entirely defeated at Zama, they made peace upon such advantageous terms as gave them an entire superiority over that republic, which they not long after entirely subverted, as has been related in the history of CARTHAGE.

173 The Roman empire arrives at its full extent.

The successful issue of the second Punic war had greatly increased the extent of the Roman empire. They were now masters of all Sicily, the Mediterranean islands, and great part of Spain; and, through the dissensions of the Asiatic states with the king of Macedon, a pretence was now found for carrying their arms into these parts. The Gauls in the mean time, however, continued their incursions, but now ceased to be formidable; while the kings of Macedon, through misconduct, were first obliged to submit to a disadvantageous peace, and at last totally subdued (see MACEDON). The reduction of Macedon was soon followed by that of all Greece, either by the name of allies or otherwise; while Antiochus the Great, to whom Hannibal fled for protection, by an unsuccessful war first gave the Romans a footing in Asia (see SYRIA). The Spaniards and Gauls continued to be the most obstinate enemies. The former, particularly, were rather exterminated than reduced; and even this required the utmost care and vigilance of Scipio Æmilianus, the conqueror of Carthage, to execute. See SPAIN and NUMANTIA.

Thus the Romans attained to a height of power superior to any other nation in the world; but now a sedition broke out, which we may say was never terminated but with the overthrow of the republic. This had its origin from Tiberius Sempronius Gracchus, descended from a family which, though plebeian, was as illustrious as any in the commonwealth. His father had Rome. been twice raised to the consulate, was a great general, and had been honoured with two triumphs. But he was still more renowned for his domestic virtues and probity, than for his birth or valour. He married the daughter of the first Africanus, said to be the pattern of her sex, and the prodigy of her age; and had by her several children, of whom three only arrived to maturity of age, Tiberius Gracchus, Caius Gracchus, and a daughter named *Sempronia*, who was married to the second Africanus. Tiberius, the eldest, was deemed the most accomplished youth in Rome, with respect to the qualities both of body and mind. His extraordinary talents were heightened by a noble air, an engaging countenance, and all those winning graces of nature which recommend merit. He made his first campaigns under his brother-in-law, and distinguished himself on all occasions by his courage, and by the prudence of his conduct. When he returned to Rome, he applied himself to the study of eloquence; and at 30 years old was accounted the best orator of his age. He married the daughter of Appius Claudius, who had been formerly consul and censor, and was then prince of the senate. He continued for some time in the sentiments both of his own and his wife's family, and supported the interests of the patricians; but without openly attacking the popular faction. He was the chief author and negociator of that shameful necessary peace with the Numantines; which the senate, with the utmost injustice, disannulled, and condemned the consul, the quæstor, and all the officers who had signed it, to be delivered up to the Numantines (see NUMANTIA). The people indeed, out of esteem for Gracchus, would not suffer him to be sacrificed: but, however, he had just reason to complain, both of the senate and people, for passing so scandalous a decree against his general and himself, and breaking a treaty whereby the lives of so many citizens had been saved. But as the senate had chiefly promoted such base and iniquitous proceedings, he resolved in due time to show his resentment against the party which had contributed most to his disgrace.

In order to this, he stood for the tribuneship of the people; which he no sooner obtained, than he resolved to attack the nobility in the most tender part. They had usurped lands unjustly; cultivated them by slaves, to the great detriment of the public; and had lived for about 250 years in open defiance to the Licinian law, by which it was enacted that no citizen should possess more than 500 acres. This law Tib. Gracchus resolved to revive, and by that means revenge himself on the patricians. But it was not revenge alone which prompted him to embark in so dangerous an attempt. It is pretended, that his mother Cornelia animated him to undertake something worthy both of his and her family. The reproaches of his mother, the authority of some great men, namely of his father-in-law Appius Claudius, of P. Crassus the *pontifex maximus*, and of Mutius Scævola, the most learned civilian in Rome, and his natural thirst after glory, joined with an eager desire of revenge, conspired to draw him into this most unfortunate scheme.

174 Sedition of the Gracchi.

175 A new law proposed by Gracchus.

The law, as he first drew it up, was very mild: for it only enacted, that those who possessed more than 500 acres of land should part with the overplus; and that the

Rome. the full value of the ſaid lands ſhould be paid them out of the public treaſury. The lands thus purchaſed by the public were to be divided among the poor citizens; and cultivated either by themſelves or by freemen, who were upon the ſpot. Tiberius allowed every child of a family to hold 250 acres in his own name, over and above what was allowed to the father. Nothing could be more mild than this new law; ſince by the Licinian he might have abſolutely deprived the rich of the lands they unjuſtly poſſeſſed, and made them accountable for the profits they had received from them during their long poſſeſſion. But the rich patricians could not ſo much as bear the name of the *Licinian law*, though thus qualified. Thoſe chiefly of the ſenatorial and equeſtrian order exclaimed againſt it, and were continually mounting the roſtra one after another, in order to diſſuade the people from accepting a law which, they ſaid, would raiſe diſturbances, that might prove more dangerous than the evils which Tiberius pretended to redreſs by the promulgation of it. Thus the zealous tribune was obliged day after day to enter the liſts with freſh adverſaries; but he ever got the better of them both in point of eloquence and argument.

The people were charmed to hear him maintain the cauſe of the unfortunate with ſo much ſucceſs, and beſtowed on him the higheſt commendations. The rich therefore had recourſe to violence and calumny, in order to deſtroy, or at leaſt to diſcredit, the tribune. It is ſaid they hired aſſaſſins to diſpatch him; but they could not put their wicked deſign in execution, Gracchus being always attended to and from the roſtra by a guard of about 4000 men. His adverſaries therefore endeavoured to ruin his reputation by the blackeſt calumnies. They gave out that he aimed at monarchy; and publiſhed pretended plots laid for crowning him king. But the people, without giving ear to ſuch groundleſs reports, made it their whole buſineſs to encourage their tribune, who was hazarding both his life and reputation for their ſakes.

When the day came on which this law was to be accepted or rejected by the people aſſembled in the comitium, Gracchus began with haranguing the mighty croud which an affair of ſuch importance had brought together both from the city and country. In his ſpeech he ſhowed the juſtice of the law with ſo much eloquence, made ſo moving a deſcription of the miſeries of the meaner ſort of people, and at the ſame time ſet forth in ſuch odious colours the uſurpation of the public lands, and the immenſe riches which the avarice and rapaciouſneſs of the great had raked together, that the people, tranſported with fury, demanded with loud cries the billets, that they might give their ſuffrages. Then Gracchus, finding the minds of the citizens in that warmth and emotion which was neceſſary for the ſucceſs of his deſign, ordered the law to be read.

156 Oppoſed by the tribune Octavius.

But unluckily one of the tribunes, by name *Marcus Octavius Cacina*, who had always profeſſed a great friendſhip for Gracchus, having been gained over by the patricians, declared againſt the proceedings of his friend and colleague; and pronounced the word which had been always awful in the mouth of a tribune of the people, *Veto*, "I forbid it." As Octavius was a man of an unblameable character, and had hitherto been very zealous for the publication of the law, Gracchus was greatly ſurpriſed at this unexpected oppoſition from his friend. However, he kept his temper, and only deſired the people to aſſemble again the next day to hear their two tribunes, one in defence of, the other in oppoſition to, the law propoſed. The people met at the time appointed; when Gracchus addreſſing himſelf to his colleague, conjured him by the mutual duties of their function, and by the bonds of their ancient friendſhip, not to oppoſe the good of the people, whom they were bound in honour to protect againſt the uſurpation of the great: nay, taking his colleague aſide, he addreſſed him thus, "Perhaps you are perſonally concerned to oppoſe this law; if ſo, I mean, if you have more than the five hundred acres, I myſelf, poor as I am, engage to pay you in money what you will loſe in land." But Octavius, either out of ſhame, or from a principle of honour, continued immoveable in the party he had embraced. Rome.

Gracchus therefore had recourſe to another expedient; which was to ſuſpend all the magiſtrates in Rome from the execution of their offices. It was lawful for any tribune to take this ſtep, when the paſſing of the law which he propoſed was prevented by mere chicanery. After this, he aſſembled the people anew, and made a ſecond attempt to ſucceed in his deſign. When all things were got ready for collecting the ſuffrages, the rich privately conveyed away the urns in which the tablets were kept. This kindled the tribune's indignation, and the rage of the people. The comitium was like to become a field of battle, when two venerable ſenators, Manlius and Fulvius, very ſeaſonably interpoſed; and throwing themſelves at the tribune's feet, prevailed upon him to ſubmit his law to the judgment of the conſcript fathers. This was making the ſenators judges in their own cauſe: but Gracchus thought the law ſo undeniably juſt, that he could not perſuade himſelf that they would reject it; and if they did, he knew that the incenſed multitude would no longer keep any meaſures with them.

The ſenate, who wanted nothing but to gain time, affected delays, and came to no reſolution. There were indeed ſome among them, who, out of a principle of equity, were for paying ſome regard to the complaints of the tribune, and for ſacrificing their own intereſt to the relief of the diſtreſſed. But the far greater part would not hear of any compoſition whatſoever. Hereupon Gracchus brought the affair anew before the people, and earneſtly intreated his colleague Octavius to drop his oppoſition, in compaſſion to the many unfortunate people for whom he interceded. He put him in mind of their ancient friendſhip, took him by the hand, and affectionately embraced him. But ſtill Octavius was inflexible. Hereupon Gracchus reſolved to deprive Octavius of his tribuneſhip, ſince he alone obſtinately withſtood the deſires of the whole body of ſo great a people. Having therefore aſſembled the people, he told them, that ſince his colleague and he were divided in opinion, and the republic ſuffered by their diviſion, it was the province of the tribes aſſembled in comitia to re-eſtabliſh concord among their tribunes. "If the cauſe I maintain (ſaid he) be, in your opinion, unjuſt, I am ready to give up my ſeat in the college. On the contrary, if you judge me worthy of being continued in your ſervice in this ſtation, deprive him of the tribuneſhip who alone obſtructs my wiſhes, As ſoon as you ſhall have

Rome. nominated one to ſucceed him, the law will paſs without oppoſition." Having thus ſpoken, he diſmiſſed the aſſembly, after having ſummoned them to meet again the next day.

And now Gracchus, being ſcured with the oppoſition he had met with from the rich, and from his obſtinate colleague, and being well appriſed that the law would paſs in any form in which he ſhould think fit to propoſe it, reſolved to revive it as it was at firſt paſſed, without abating any thing of its ſeverity. There was no exception in favour of the children in families; or reimburſement promiſed to thoſe who ſhould part with the lands they poſſeſſed above 500 acres. The next day the people being aſſembled in vaſt crowds on this extraordinary occaſion, Gracchus made freſh applications to Octavius, but to no purpoſe; he obſtinately perſiſted in his oppoſition. Then Gracchus turning to the people, "Judge you, (ſaid he), which of us deſerves to be deprived of his office." At theſe words the firſt tribe voted, and declared for the depoſition of Octavius. Upon which Gracchus, ſuſpending the ardour of the tribes, made another effort to bring over his opponent by gentle methods. But all his endeavours proving ineffectual, the other tribes went on to vote in their turns, and followed the example of the firſt. Of 35 tribes, 17 had already declared againſt Octavius, and the 18th was juſt going to determine the affair, when Gracchus, being willing to try once more whether he could reclaim his colleague, ſuſpended the collecting of the ſuffrages; and addreſſing Octavius in the moſt preſſing terms conjured him not to expoſe himſelf, by his obſtinacy, to ſo great a diſgrace, nor to give him the grief of having caſt a blemiſh upon his colleague and friend, which neither time nor merit would ever wipe off. Octavius, however, continuing obſtinate, was depoſed, and the law paſſed as Gracchus had propoſed it the laſt time. The depoſed tribune was dragged from the roſtra by the incenſed multitude, who would have inſulted him further, had not the ſenators and his friends facilitated his eſcape.

177 Who is depoſed, and the law paſſed.

The Licinian law being thus revived with one conſent both by the city and country tribes, Gracchus cauſed the people to appoint triumvirs, or three commiſſioners, to haſten its execution. In this commiſſion the people gave Gracchus the firſt place; and he had intereſt enough to get his father-in-law Appius Claudius and his brother Caius Gracchus, appointed his colleagues. Theſe three ſpent the whole ſummer in traveling through all the Italian provinces, to examine what lands were held by any perſon above 500 acres, in order to divide them among the poor citizens. When Gracchus returned from his progreſs, he found, by the death of his chief agent, that his abſence had not abated either the hatred of the rich, or the love of the poor, toward him. As it plainly appeared that the deceaſed had been poiſoned, the tribune took this occaſion to apply himſelf again to his protectors, and implore their aſſiſtance againſt the violence and treachery of his enemies. The populace, more attached after this accident to their hero than ever, declared they would ſtand by him to the laſt drop of their blood; and this their zeal encouraged him to add a new clauſe to the law, viz. that the commiſſioners ſhould likewiſe inquire what lands had been uſurped from the republic. This was touching the ſenators in a moſt tender point; for moſt of them had appropriated to themſelves lands belonging to the republic. But after all, the tribune, upon a ſtrict inquiry, found that the lands taken from the rich would not be enough to content all the poor citizens. But the following accident eaſed him of this difficulty, and enabled him to ſtop the murmurs of the malcontents among the people. Rome.

178 The treaſures of Attalus divided among the people by Gracchus.

Attalus Philometer, king of Pergamus, having bequeathed his dominions and effects to the Romans, Eudemus the Pergamean brought his treaſures to Rome at this time; and Gracchus immediately got a new law paſſed, enacting, that this money ſhould be divided among the poor citizens who could not have lands; and that the diſpoſal of the revenues of Pergamus ſhould not be in the ſenate, but in the comitia. By theſe ſteps Gracchus moſt effectually humbled the ſenate; who, in order to diſcredit him among the people, gave out that Eudemus, who had brought the king's will to Rome, had left with Gracchus the royal diadem and mantle of Attalus, which the law-making tribune was to uſe when he ſhould be proclaimed king of Rome. But theſe reports only ſerved to make Gracchus be more upon his guard, and to inſpire the people with an implacable hatred againſt the rich who were the authors of them. Gracchus being now, by his power over the minds of the multitude, abſolute maſter of their ſuffrages, formed a deſign of raiſing his father-in-law Appius Claudius to the conſulate next year, of promoting his brother Caius to the tribuneſhip, and getting himſelf continued in the ſame office. The laſt was what moſt nearly concerned him; his perſon, as long as he was in office, being ſacred and inviolable. As the ſenate was very active in endeavouring to get ſuch only elected into the college of tribunes as were enemies to Gracchus and his faction, the tribune left no ſtone unturned to ſecure his election. He told the people, that the rich had reſolved to aſſaſſinate him as ſoon as he was out of his office; he appeared in mourning, as was the cuſtom in the greateſt calamities; and bringing his children, yet young, into the forum, recommended them to the people in ſuch terms, as ſhowed that he deſpaired of his own preſervation. At this ſight the populace returned no anſwer, but by outcries and menaces againſt the rich.

When the day appointed for the election of new tribunes came, the people were ordered to aſſemble in the Capitol in the great court before the temple of Jupiter. The tribes being met, Gracchus produced his petition, intreating the people to continue him one year longer in the office of tribune, in conſideration of the great danger to which he was expoſed, the rich having vowed his deſtruction as ſoon as his perſon ſhould be no more ſacred. This was indeed an unuſual requeſt, it having been long cuſtomary not to continue any tribune in his office above a year. However, the tribes began to vote, and the two firſt declared for Gracchus. Hereupon the rich made great clamours; which terrified Rubrius Varro, who preſided in the college of tribunes that day, to ſuch a degree, that he reſigned his place to Q. Mummius, who offered to preſide in his room. But this raiſed a tumult among the tribunes themſelves; ſo that Gracchus wiſely diſmiſſed the aſſembly, and ordered them to meet again the next day.

In the mean time the people, being ſenſible of what importance it was to them to preſerve the life of ſo powerful

Rome. powerful a protector, not only conducted him home, but watched by turns all night at his door. Next morning by break of day, Gracchus having aſſembled his friends, led them from his houſe, and poſted one half of them in the comitium, while he went up himſelf with the other to the Capitol. As ſoon as he appeared, the people ſaluted him with loud acclamations of joy. But ſcarce was he placed in his tribunal, when Fulvius Flaccus a ſenator, and friend to Gracchus, breaking through the crowd, came up to him, and gave him notice, that the ſenators, who were aſſembled in the temple of Faith, which almoſt touched that of Jupiter Capitolinus, had conſpired againſt his life, and were reſolved to attack him openly on his very tribunal. Hereupon Gracchus tucked up his robe, as it were, to prepare for a battle; and, after his example, ſome of his party, ſeizing the ſtaves of the apparitors, prepared to defend themſelves, and to repel force by force. Theſe preparations terrified the other tribunes; who immediately abandoned their places in a cowardly manner, and mixed with the crowd; while the prieſts ran to ſhut the gates of the temple, for fear of its being profaned. On the other hand, the friends of Gracchus, who were diſperſed by parties in different places, cried out, *We are ready: What muſt we do?* Gracchus, whoſe voice could not be heard by all his adherents on account of the tumult, the clamours, and the confuſed cries of the different parties, put his hand to his head; which was the ſignal agreed on to prepare for battle. But ſome of his enemies, putting a malicious conſtruction upon that geſture, immediately flew to the ſenate, and told the fathers, that the ſeditious tribune had called for the crown to be put upon his head. Hereupon the ſenators, fancying they already ſaw the king of Pergamus's diadem on the tribune's head, and the royal mantle on his ſhoulders, reſolved to give the conſul leave to arm his legions, treat the friends of Gracchus as enemies, aud turn the comitium into a field of battle.

179 A conſpiracy againſt his life.

But the conſul Multius Scævola, who was a prudent and moderate man, refuſed to be the inſtrument of their raſh revenge, and to diſhonour his conſulate with the maſſacre of a diſarmed people As Calpurnius Piſo, the other conſul, was then in Sicily, the moſt turbulent among the ſenators cried out, "Since one of our conſuls is abſent, and the other betrays the republic, let us do ourſelves juſtice; let us immediately go and demoliſh with our own hands this idol of the people." Scipio Naſica, who had been all along for violent meaſures, inveighed bitterly againſt the conſul for refuſing to ſuccour the republic in her greateſt diſtreſs. Scipio Naſica was the great grandſon of Cneius Scipio, the uncle of the firſt Africanus, and conſequently couſin to the Gracchi by their mother Cornelia. But nevertheleſs not one of the ſenators betrayed a more irreconcileable hatred againſt the tribune than he. When the prudent conſul refuſed to arm his legions, and put the adherents of Gracchus to death contrary to the uſual forms of juſtice, he ſet no bounds to his fury, but, riſing up from his place, cried out like a madman, "Since our conſul betrays us, let thoſe who love the republic follow me." Having uttered theſe words, he immediately walked out of the temple, attended by a great number of ſenators.

Naſica threw his robe over his ſhoulders, and having covered his head with it, advanced with his followers into the crowd, where he was joined by a company of the clients and friends of the patricians, armed with ſtaves and clubs. Theſe, falling indifferently upon all who ſtood in their way, diſperſed the crowd. Many of Gracchus's party took to their heels; and in that tumult all the ſeats being overturned and broken, Naſica, armed with the leg of a broken bench, knocked down all who oppoſed him, and at length reached Gracchus. One of his party ſeized the tribune by the lappet of his robe: but he, quitting his gown, fled in his tunic; and as he was in that hurry of ſpirits, which is inſeparable from fear, leaping over the broken benches, he had the misfortune to ſlip and fall. As he was getting up again, he received a blow on the head, which ſtunned him: then his adverſaries ruſhing in upon him, with repeated blows put an end to his life.

Rome 180 A ſcuffle enſues, in which Gracchus is killed.

Rome was by his death delivered, according to Cicero, from a domeſtic enemy, who was more formidable to her than even that Numantia, which had firſt kindled his reſentments. Perhaps no man was ever born with greater talents, or more capable of aggrandizing himſelf, and doing honour to his country. But his great mind, his manly courage, his lively, eaſy, and powerful eloquence, were, ſays Cicero, like a ſword in the hands of a madman. Gracchus abuſed them, not in ſupporting an unjuſt cauſe, but in conducting a good one with too much violence. He went ſo far as to make ſome believe that he had really ſomething in view beſides the intereſt of the people whom he pretended to relieve; and therefore ſome hiſtorians have repreſented him as a tyrant. But the moſt judicious writers clear him from this imputation, and aſcribe his firſt deſign of reviving the Licinian law to an eager deſire of being revenged on the ſenators for the affront they had very unjuſtly put upon him, and the conſul Mancinus, as we have hinted above. The law he attempted to revive had an air of juſtice, which gave a ſanction to his revenge, without caſting any blemiſh on his reputation.

181 His friends maſſacred.

The death of Gracchus did not put an end to the tumult. Above 300 of the tribune's friends loſt their lives in the fray; and their bodies were thrown, with that of Gracchus, into the Tiber. Nay, the ſenate carried their revenge beyond the fatal day which had ſtained the Capitol with Roman blood. They ſought for all the friends of the late tribune, and without any form of law aſſaſſinated ſome, and forced others into baniſhment. Caius Billius, one of the moſt zealous defenders of the people, was ſeized by his enemies, and ſhut up in a caſk with ſnakes and vipers, where he miſerably periſhed. Though the laws prohibited any citizen to take away the life of another before he had been legally condemned, Naſica and his followers were acquitted by the ſenate, who enacted a decree, juſtifying all the cruelties committed againſt Gracchus and his adherents.

182 The diſturbances in Sicily create.

Theſe diſturbances were for a ſhort time interrupted by a revolt of the ſlaves in Sicily, occaſioned by the cruelty of their maſters; but they being ſoon reduced, the conteſts about the *Sempronian law*, as it was called, again took place. Both parties were determined not to yield; and therefore the moſt fatal effects enſued. The firſt thing of conſequence was the death of Scipio

Rome. pus Africanus the Second, who was privately ſtrangled in his bed by ſome of the patrician party, [illegible] C. Caius Gracchus, brother to the [illegible] unfortunately killed, not only upon the revival of the Sempronian law, but upon a new one, granting the right of Roman citizens to all the Italian allies, who could receive no benefit from the laws or aſſiſtance of the Sempronian law. The conſequences of this were much worſe than the former, the flame ſpread through all Italy; and the nations who had made war with the republic in its infancy again commenced enemies more formidable than before. Fregellæ, a city of the Volſci, revolted: but being ſuddenly attacked, was obliged to ſubmit, and was raſed to the ground; which quieted matters for the preſent. Gracchus, however, ſtill continued his attempts to humble the ſenate and the reſt of the patrician body: the ultimate conſequence of which was, that a price was ſet on his head, and that of Fulvius his confederate, no leſs than their weight in gold, to any one who ſhould bring them to Opimius the chief of the patrician party. Thus the cuſtom of proſcription was begun by the patricians, of which they themſelves ſoon had enough. Gracchus and Fulvius were ſacrificed, but the defenders of the republic were not ſo eaſily cured.

182 The conſuls oppoſe the Cimbri.

The inundation of the Cimbri and Teutones put a ſtop to the civil diſcords for ſome time longer; but they being defeated, as related under the articles Cimbri and Teutones, nothing prevented the troubles from being revived with greater fury than before, except the war with the Sicilian ſlaves, which had again commenced with more dangerous circumſtances than ever. But this war being totally ended about 99 B. C. no farther obſtacle remained. Marius, the conqueror of Jugurtha * and the Cimbri, undertook the cauſe of the plebeians againſt the ſenate and patricians. Having aſſociated himſelf with Apuleius and Glaucia, two factious men, they carried their proceedings to ſuch a length, that an open rebellion commenced, and Marius himſelf was obliged to act againſt his allies. Peace, however, was for the preſent reſtored by the miniſters of Apuleius and Glaucia, with a great number of their followers; upon which Marius thought proper to leave the city.

* See Numidia.

While factious men thus endeavoured to tear the republic in pieces, the attempts of well-meaning people to heal thoſe diviſions ſerved only to involve the ſtate in calamities ſtill more grievous. The conſuls obſerved, that many individuals of the Italian allies lived at Rome, and falſely pretended to be Roman citizens. By means of them, it was likewiſe perceived, that the plebeian party had acquired a great deal of its power; as the votes of theſe pretended citizens were always at the ſervice of the tribunes. The conſuls therefore got a law paſſed, commanding all thoſe pretended citizens to return home. This was ſo much reſented by the Italian ſtates, that an univerſal defection took place. A ſcheme was then formed by M. Livius Druſus, a tribune of the people, to reconcile all orders of men; but this only made matters worſe, and procured his own aſſaſſination. His death ſeemed a ſignal for war. The Marſi, Peligni, Samnites, Campanians, and Lucanians, and in ſhort all the provinces from the river Liris to the Adriatic, revolted at once, and formed themſelves into a republic, in oppoſition to that of Rome.

183 The ſocial war.

The haughty Romans were now made thoroughly ſenſible that they were not invincible: they were defeated in almoſt every engagement; and muſt ſoon have yielded, had they not fallen upon a method of dividing their enemies. A law was paſſed, enacting, that all the nations in Italy, whoſe alliance with Rome was indiſputable, ſhould enjoy the right of Roman citizens. This drew off ſeveral nations from the alliance; and at the ſame time, Sylla taking upon him the command of the Roman armies, fortune ſoon declared in favour of the latter. Rome.

The ſucceſs of Rome againſt the allies ſerved only to bring greater miſeries upon herſelf. Marius and Sylla became rivals; the former adhering to the people, and the latter to the patricians. Marius aſſociated with one of the tribunes named *Sulpitius*; in conjunction with whom he raiſed ſuch diſturbances, that Sylla was forced to retire from the city. Having thus driven off his rival, Marius got himſelf appointed general againſt Mithridates † king of Pontus; but the ſoldiers refuſed to obey any other than Sylla. A civil war immediately enſued, in which Marius was driven out in his turn, and a price ſet upon his head and that of Sulpitius, with many of their adherents. Sulpitius was ſoon ſeized and killed; but Marius made his eſcape. In the mean time, however, the cruelties of Sylla rendered him obnoxious both to the ſenate and people; and Cinna, a furious partiſan of the Marian faction, being choſen conſul, cited him to give an account of his conduct. Upon this Sylla thought proper to ſet out for Aſia; Marius was recalled from Africa, whither he had fled; and immediately on his landing in Italy, was joined by a great number of ſhepherds, ſlaves, and men of deſperate fortunes; ſo that he ſoon ſaw himſelf at the head of a conſiderable army. † See Pontus.

184 Horrid cruelties committed by Cinna, Marius, &c.

Cinna, in the mean time, whom the ſenators had depoſed and driven out of Rome, ſolicited and obtained a powerful army from the allies; and being joined by Sertorius, a moſt able and experienced general, the two, in conjunction with Marius, advanced, towards the capital; and as their forces daily increaſed, a fourth army was formed under the command of Papirius Carbo. The ſenate raiſed ſome forces to defend the city; but the troops being vaſtly inferior in number, and likewiſe inclined to the contrary ſide, they were obliged to open their gates to the confederates. Marius entered at the head of a numerous guard compoſed of ſlaves, whom he called his *Bardiæans*, and whom he deſigned to employ in revenging himſelf on his enemies. The firſt order he gave theſe aſſaſſins was, to murder all who came to ſalute him, and were not anſwered with the like civility. As every one was forward to pay his compliments to the new tyrant, this order proved the deſtruction of vaſt numbers. At laſt theſe Bardiæans abandoned themſelves to ſuch exceſſes in every kind of vice, that Cinna and Sertorius ordered their troops to fall upon them; which being inſtantly put in execution, they were all cut off to a man.

By the deſtruction of his guards, Marius was reduced to the neceſſity of taking a method of gratifying his revenge ſomewhat more tedious, though equally effectual. A conferrence was held between the four chiefs, in which Marius ſeemed quite frantic with rage. Sertorius endeavoured to moderate his fury; but, being over-

Rome. over-ruled by Cinna and Carbo, a reſolution was taken to murder without mercy all the ſenators who had oppoſed the popular faction. This was immediately put in execution. A general ſlaughter commenced, which laſted five days, and during which the greateſt part of the obnoxious ſenators were cut off, their heads ſtuck upon poles over-againſt the roſtra, and their bodies dragged with hooks into the forum, where they were left to be devoured by dogs. Sylla's houſe was demoliſhed, his goods confiſcated, and he himſelf declared an enemy to his country; however, his wife and children had the good fortunate to make their eſcape.—This maſſacre was not confined to the city of Rome. The ſoldiers, like as many blood-hounds, were diſperſed over the country in ſearch of thoſe who fled. The neighbouring towns, villages, and all the highways, ſwarmed with aſſaſſins; and on this occaſion Plutarch obſerves with great concern, that the moſt ſacred ties of friendſhip and hoſpitality are not proof againſt treachery, in the day of adverſity, for there were but very few who did not diſcover their friends who had fled to them for ſhelter.

185 Sylla threatens revenge.

This ſlaughter being over, Cinna named himſelf and Marius conſuls for the enſuing year; and theſe tyrants ſeemed reſolved to begin the new year as they had ended the old one: but, while they were preparing to renew their cruelties, Sylla, having proved victorious in the eaſt, ſent a long letter to the ſenate, giving an account of his many victories, and his reſolution of returning to Rome, not to reſtore peace to his country, but to revenge himſelf of his enemies, *i. e.* to deſtroy thoſe whom Marius had ſpared. This letter occaſioned an univerſal terror. Marius, dreading to enter the liſts with ſuch a renowned warrior, gave himſelf up to exceſſive drinking, and died. His ſon was aſſociated with Cinna in the government, though not in the conſulſhip and proved a tyrant no leſs cruel than his father. The ſenate declared one Valerius Flaccus general of the forces in the eaſt, and appointed him a conſiderable army; but the troops all to a man deſerted him, and joined Sylla. Soon after, Cinna declared himſelf conſul a third time, and took for his colleague Papirius Carbo; but the citizens, dreading the tyranny of theſe inhuman monſters, fled in crowds to Sylla, who was now in Greece. To him the ſenate ſent deputies, begging that he would have compaſſion on his country, and not carry his reſentment to ſuch a length as to begin a civil war: but he replied, that he was coming to Rome full of rage and revenge; and that all his enemies, if the Roman people conſented to it, ſhould periſh either by the ſword or the axes of the executioners. Upon this ſeveral very numerous armies were formed againſt him; but, through the miſconduct of the generals who commanded them, theſe armies were everywhere defeated, or went over to the enemy. Pompey, afterwards ſtyled *the Great*, ſignalized himſelf in this war, and embraced the party of Sylla. The Italian nations took ſome one ſide and ſome another, as their different inclinations led them. Cinna, in the mean time, was killed in a tumult, and young Marius and Carbo ſucceeded him; but the former having ventured an engagement with Sylla, was by him defeated, and forced to fly to Prænеſte, where he was cloſely beſieged.

Thus was Rome reduced to the loweſt degree of miſery, when one Pontius Teleſinus, a Samnite of great experience in war, projected the total ruin of the city. He had joined, or pretended to join, the generals of the Marian faction with an army of 40,000 men; and therefore marched towards Prænеſte, as if he deſigned to relieve Marius. By this means he drew Sylla and Pompey away from the capital; and then decamping in the night, over-reached theſe two generals, and by break of day was within 10 furlongs of the Collatine gate. He then pulled off the mask; and declaring himſelf as much an enemy to Marius as to Sylla, told his troops, that it was not his deſign to aſſiſt one Roman againſt another, but to deſtroy the whole race. "Let fire and ſword (ſaid he) deſtroy all; let no quarter be given; mankind can never be free as long as one Roman is left alive."—Never had this proud metropolis been in greater danger; nor ever had any city a more narrow eſcape. The Roman youth marched out to oppoſe him, but were driven back with great ſlaughter. Sylla himſelf was defeated, and forced to fly to his camp. Teleſinus advanced with more fury than ever; but, in the mean time, the other wing of his army having been defeated by M. Craſſus, the victorious general attacked the body where Teleſinus commanded, and by putting them to flight, ſaved his country from the moſt imminent danger.

Rome. 186 Rome in the utmoſt danger from Teleſinus a Samnite.

Sylla, having now no enemy to fear, marched firſt to Atemnæ, and thence to Rome. From the former city be carried 8000 priſoners to Rome, and cauſed them all to be maſſacred at once in the circus. His cruelty next fell upon the Prænеſtines, 12,000 of whom were maſſacred without mercy. Young Marius had killed himſelf, in order to avoid falling into the hands of ſuch a cruel enemy. Soon after, the inhabitants of Norba, a city of Campania, finding themſelves unable to reſiſt the forces of the tyrant, ſet fire to their houſes, and all periſhed in the flames. The taking of theſe cities put an end to the civil war, but not to the cruelties of Sylla. Having aſſembled the people in the comitium, he told them, that he was reſolved not to ſpare a ſingle perſon who had borne arms againſt him. This cruel reſolution he put in execution with the moſt unrelenting vigour; and having at laſt cut off all thoſe whom he thought capable of oppoſing him, Sylla cauſed himſelf to be declared perpetual dictator, or, in other words, king and abſolute ſovereign of Rome.

187 Monſtrous cruelty of Sylla.

This revolution happened about 80 B C. and from this time we may date the loſs of the Roman liberty. Sylla indeed reſigned his power in two years; but the citizens of Rome having once ſubmitted, were ever after more inclined to ſubmit to a maſter. Though individuals retained the ſame enthuſiaſtic notions of liberty as before, yet the minds of the generality ſeem from this time to have inclined towards monarchy. New maſters were indeed already prepared for the republic. Cæſar and Pompey had eminently diſtinguiſhed themſelves by their martial exploits, and were already rivals. They were, however, for ſome time prevented from raiſing any diſturbances by being kept at a diſtance from each other. Sertorius, one of the generals of the Marian faction, and the only one of them poſſeſſed either of honour or probity, had retired into

187 He is proclaimed perpetual dictator.

Rome. into Spain, where he erected a republic independent of Rome. Pompey and Metellus, two of the beſt reputed generals in Rome, were ſent againſt him; but inſtead of conquering, they were on all occaſions conquered by him, and obliged to abandon their enterprize with diſgrace. At laſt Sertorius was treacherouſly murdered; and the traitors, who after his death uſurped the command, being totally deſtitute of his abilities, were eaſily defeated by Pompey: and thus that general reaped an undeſerved honour from concluding the war with ſucceſs.

The Spaniſh war was ſcarce ended, when a very dangerous one was excited by Spartacus, a Thracian gladiator. For ſome time this rebel proved very ſucceſsful; but at laſt was totally defeated and killed by Craſſus. The fugitives, however, rallied again, to the number of 5000; but, being totally defeated by Pompey, the latter took occaſion from thence to claim the glory which was juſtly due to Craſſus. Being thus become extremely popular, and ſetting no bounds to his ambition, he was choſen conſul along with Craſſus. Both generals were at the head of powerful armies; and a conteſt between them immediately began about who ſhould firſt lay down their arms. With difficulty they were in appearance reconciled, and immediately began to oppoſe one another in a new way. Pompey courted the favour of the people, by reinſtating the tribunes in their ancient power, which had been greatly abridged by Sylla. Craſſus, though naturally covetous, entertained the populace with ſurpriſing profuſion at 10,000 tables, and at the ſame time diſtributed corn ſufficient to maintain their families for three months. — Theſe prodigious expences will ſeem leſs ſurpriſing, when we conſider that Craſſus was the richeſt man in Rome, and that his eſtate amounted to upwards of 7000 talents, *i. e.* 1,356,250 l. ſterling. Notwithſtanding his utmoſt efforts, however, Pompey ſtill had the ſuperiority; and was therefore propoſed as a proper perſon to be employed for clearing the ſeas of pirates. In this new ſtation a moſt extenſive power was to be granted to him. He was to have an abſolute authority for three years over all the ſeas within the ſtraits or pillars of Hercules, and over all the countries for the ſpace of 400 furlongs from the ſea. He was empowered to raiſe as many ſoldiers and mariners as he thought proper; to take what ſums of money he pleaſed out of the public treaſury without being accountable for them; and to chooſe out of the ſenate fifteen ſenators to be his lieutenants, and to execute his orders when he himſelf could not be preſent. The ſenſible part of the people were againſt inveſting one man with ſo much power; but the unthinking multitude rendered all oppoſition fruitleſs. The tribune Roſcius attempted to ſpeak againſt it, but was prevented by the clamours of the people. He then held up two of his fingers, to ſhow that he was for dividing that extenſive commiſſion between two perſons: but on this the aſſembly burſt out into ſuch hideous outcres, that a crow flying accidentally over the comitium, was ſtunned with the noiſe, and fell down among the rabble. This law being agreed to, Pompey executed his commiſſion ſo much to the public ſatisfaction, that on his return a new law was propoſed in his favour. By this he was to be appointed general of all the forces in Aſia; and as he was ſtill to retain the ſovereignty of the ſeas, he was now in fact made ſovereign of all the Roman empire. — This law was ſupported by Cicero and Cæſar, the former aſpiring at the conſulate, and the latter pleaſed to ſee the Romans ſo readily appointing themſelves a maſter. Pompey, however, executed his commiſſion with the utmoſt fidelity and ſucceſs, completing the conqueſt of Pontus, Albania, Iberia, &c. which had been ſucceſsfully begun by Sylla and Lucullus.

189 Pompey and Craſſus aſſume great authority.

Rome.

But while Pompey was thus aggrandiſing himſelf, the republic was on the point of being ſubverted by a conſpiracy formed by Lucius Sergius Catiline. He was deſcended from an illuſtrious family; but having quite ruined his eſtate, and rendered himſelf infamous by a ſeries of the moſt deteſtable crimes, he aſſociated with a number of others in circumſtances ſimilar to his own, in order to repair their broken fortunes by ruining their country. Their ſcheme was to murder the conſuls together with the greateſt part of the ſenators, ſet fire to the city in different places, and then ſeize the government. This wicked deſign miſcarried twice; but was not on that account dropped by the conſpirators. Their party increaſed every day; and both Cæſar and Craſſus, who ſince the departure of Pompey had ſtudied to gain the affections of the people as far as poſſible, were thought to have been privy to the conſpiracy. At laſt, however, the matter was diſcovered by means of a young knight, who had indiſcreetly revealed the ſecret to his paramour. Catiline then openly took the field, and, ſoon raiſed a conſiderable army: but was utterly defeated and killed about 62 B. C.; and thus the republic was freed from the preſent danger.

190 Conſpiracy of Catiline.

In the mean time, Cæſar continued to advance in popularity and in power. Soon after the defeat of Catiline, he was created pontifex maximus; and after that was ſent into Spain, where he ſubdued ſeveral nations that had never before been ſubject to Rome. — While he was thus employed, his rival Pompey returned from the eaſt, and was received with the higheſt honours; but though ſtill as ambitious as ever, he now affected extraordinary modeſty, and declined accepting of the applauſe which was offered him. His aim was to aſſume a ſovereign authority without ſeeming to deſire it; but he was ſoon convinced, that, if he deſired to reign over his fellow-citizens, it muſt be by force of arms. He therefore renewed his intrigues, and ſpared no pains, however mean and ſcandalous, to increaſe his popularity. Cæſar, on his return from Spain, found the ſovereignty divided between Craſſus and Pompey, each of whom was ineffectually ſtruggling to get the better of the other. Cæſar, no leſs ambitious than the other two, propoſed that they ſhould put an end to their differences, and take him for a partner in their power. In ſhort, he projected a triumvirate, or aſſociation of three perſons, (Pompey, Craſſus, and himſelf), in which ſhould be lodged the whole power of the ſenate and people; and, in order to make their confederacy more laſting, they bound themſelves by mutual oaths and promiſes to ſtand by each other, and ſuffer nothing to be undertaken or carried into execution without the unanimous conſent of all the three.

192 The firſt triumvirate.

Thus was the liberty of the Romans taken away a ſecond time, nor did they ever afterwards recover it; though at preſent none perceived that this was the caſe, except

Rome. except Cato. The association of the triumvirs was for a long time kept secret; and nothing appeared to the people except the reconciliation of Pompey and Crassus, for which the state reckoned itself indebted to Cæsar. The first consequence of the triumvirate was the consulship of Julius Cæsar. But though this was obtained by the favour of Pompey and Crassus, he found himself disappointed in the colleague he wanted to associate with him in that office. He had pitched upon one whom he knew he could manage as he pleased, and distributed large sums among the people in order to engage them to vote for him. The senate, however, and even Cato himself, resolved to defeat the triumvir at his own weapons; and having therefore set up another candidate, distributed such immense sums on the opposite side, that Cæsar, notwithstanding the vast riches he had acquired, was forced to yield. This defeat proved of small consequence. Cæsar set himself to engage the affections of the people; and this he did, by an agrarian law, so effectually, that he was in a manner idolized. The law was in itself very reasonable and just; nevertheless, the senate, perceiving the design with which it was proposed, thought themselves bound to oppose it. Their opposition, however, proved fruitless: the consul Bibulus, who shewed himself most active in his endeavours against it, was driven out of the assembly with the greatest indignity, and from that day became of no consideration; so that Cæsar was reckoned the sole consul.

The next step taken by Cæsar was to secure the knights, as he had already done the people; and for this purpose he abated a third of the rents which they annually paid into the treasury; after which he governed Rome with an absolute sway during the time of his consulate. The reign of this triumvir, however, was ended by his expedition into Gaul, where his military exploits acquired him the highest reputation.—Pompey and Crassus in the mean time became consuls, and governed as despotically as Cæsar himself had done. On the expiration of their first consulate, the republic fell into a kind of anarchy, entirely owing to the disorders occasioned by the two late consuls. At last, however, this confusion was ended by raising Crassus and Pompey to the consulate a second time. This was no sooner done, than a new partition of the empire was proposed. Crassus was to have Syria and all the eastern provinces, Pompey was to govern Africa and Spain, and Cæsar to be continued in Gaul, and all this for the space of five years. This law was passed by a great majority; upon which Crassus undertook an expedition against the Parthians, whom he imagined he should easily overcome, and then enrich himself with their spoils; Cæsar applied with great assiduity to the completing of the conquest of Gaul; and Pompey having nothing to do in his province, staid at Rome to govern the republic alone

The affairs of the Romans were now hastening to a crisis. Crassus, having oppressed all the provinces of the east, was totally defeated and killed by the Parthians * ; after which the two great rivals Cæsar and Pompey were left alone, without any third person who could hold the balance between them, or prevent the deadly quarrels which were about to ensue. Matters, however, continued pretty quiet till Gaul was reduced to a Roman province †. The question then was, whether Cæsar or Pompey should first resign the command of their armies, and return to the rank of private persons. As both parties saw, that whoever first laid down his arms must of course submit to the other, both refused to disarm themselves. As Cæsar, however, had amassed immense riches in Gaul, he was now in a condition not only to maintain an army capable of vying with Pompey, but even to buy over the leading men in Rome to his interest. One of the consuls, named *Æmilius Paulus*, cost him no less than 1500 talents, or 310,625l. sterling; but the other, named *Marcellus*, could not be gained at any price. Pompey had put at the head of the tribunes one Scribonius Curio, a young patrician of great abilities, but so exceedingly debauched and extravagant, that he owed upwards of four millions and a half sterling. Cæsar, by enabling him to satisfy his creditors, and supplying him with money to pursue his debaucheries, secured him to his interest; and Curio, without seeming to be in Cæsar's interest, found means to do him the most essential service. He proposed that both generals should be recalled; being well assured that Pompey would never consent to part with his army, or lay down the government of Spain with which he had been invested, so that Cæsar might draw from Pompey's refusal a pretence for continuing himself in his province at the head of his troops. This proposal threw the opposite party into great embarrassments; and while both professed their pacific intentions, both continued in readiness for the most obstinate and bloody war.—Cicero took upon himself the office of mediator; but Pompey would hearken to no terms of accommodation. The orator, surprised to find him so obstinate at the same time that he neglected to strengthen his army, asked him with what forces he designed to make head against Cæsar? To which the other answered, that he needed but stamp with his foot, and an army would start up out of the ground. This confidence he assumed because he persuaded himself that Cæsar's men would abandon him if matters came to extremities. Cæsar, however, though he affected great moderation, yet kept himself in readiness for the worst; and therefore, when the senate passed the fatal decree for a civil war, he was not in the least alarmed. This decree was issued in the year 49 B. C. and was expressed in the following words: "Let the consuls for the year, the proconsul Pompey, the prætors, and all those in or near Rome who have been consuls, provide for the public safety by the most proper means." This decree was no sooner passed, than the consul Marcellus went, with his colleague Lentulus, to a house at a small distance from the town, where Pompey then was; and presenting him with a sword, "We require you (said he) to take upon you with this the defence of the republic, and the command of her troops." Pompey obeyed; and Cæsar was by the same decree divested of his office, and one Lucius Domitius appointed to succeed him, the new governor being empowered to raise 4000 men in order to take possession of his province.

193 The decree for a civil war.

War being thus resolved on, the senate and Pompey began to make the necessary preparations for opposing Cæsar. The attempt of the latter to withhold their authority they termed a *tumult*; from which contemptible epithet it appeared that they either did not know, or did not dread, the enemy whom they were bringing upon themselves. However, they ordered 30,000 Roman

* See Parthia. 192 Rivalship of Cæsar and Pompey.

† See Gaul.

Rome.

ma...ces to be aſſembled, together with as many foreign troops as Pompey ſhould think proper; the expence of which armament was defrayed from the public treaſury. The governments of provinces, and all public honours, were beſtowed upon ſuch as were remarkable for their attachment to Pompey and their enmity to Cæſar. The latter, however, was by no means reſting in what concerned his own intereſt. Three of the tribunes who had been his friends were driven out of Rome, and arrived in his camp diſguiſed like ſlaves. Cæſar ſhowed them to his army in this ignominious habit; and, ſetting forth the iniquity of the ſenate and patricians, exhorted his men to ſtand by their general under whom they had ſerved ſo long with ſucceſs; and finding by their acclamations that he could depend on them, he reſolved to begin hoſtilities immediately.

Hoſtilities begun by Cæſar.

The firſt deſign of Cæſar was to make himſelf maſter of Ariminum, a city bordering upon Ciſalpine Gaul, and conſequently a part of his province; but as this would be looked upon as a declaration of war, he reſolved to keep his deſign as private as poſſible. At that time he himſelf was at Ravenna, from whence he ſent a detachment towards the Rubicon, deſiring the officer who commanded it to wait for him on the banks of that river. The next day he aſſiſted at a ſhow of gladiators, and made a great entertainment. Towards the cloſe of the day he roſe from table, deſiring his gueſts to ſtay till he came back, which he ſaid would be very ſoon; but, inſtead of returning to the company, he immediately ſet out for the Rubicon, having left orders to ſome of his moſt intimate friends to follow him through different roads, to avoid being obſerved. Having arrived at the Rubicon, which parted Ciſpaline Gaul from Italy, the ſucceeding misfortunes of the empire occurred to his mind, and made him heſitate. Turning then to Aſinius Pollio, "If I do not croſs the river (ſaid he), I am undone; and if I do croſs it, how many calamities ſhall I by this means bring upon Rome!" Having thus ſpoken, he muſed a few minutes; and then crying out, "The die is caſt," he threw himſelf into the river, and croſſing it, marched with all poſſible ſpeed to Ariminum, which he reached and ſurpriſed before day-break. From thence, as he had but one legion with him, he diſpatched orders to the formidable army he had left in Gaul to croſs the mountains and join him.

The activity of Cæſar ſtruck the oppoſite party with the greateſt terror; and indeed not without reaſon, for they had been extremely negligent in making preparations againſt ſuch a formidable opponent. Pompey himſelf, no leſs alarmed than the reſt, left Rome with a deſign to retire to Capua, where he had two legions whom he had formerly draughted out of Cæſar's army. He communicated his intended flight to the ſenate; but at the ſame time requeſted them, that if any magiſtrate or ſenator refuſed to follow him, he ſhould be treated as a friend to Cæſar and an enemy to his country. In the mean time Cæſar, having raiſed new troops in Ciſalpine Gaul, ſent Marc Antony with a detachment to ſeize Aretium, and ſome other officers to ſecure Piſaurum and Fanum, while he himſelf marched at the head of the thirteenth legion to Auximum, which opened its gates to him. From Auximum he advanced into Picenum, where he was joined by the twelfth legion from Tranſalpine Gaul. As Picenum readily ſubmitted to him, he led his forces againſt Corfinium, the capital of the Peligni, which Domitius Ahenobarbus defended with thirty cohorts. But Cæſar no ſooner inveſted it, than the garriſon betrayed their commander, and delivered him up with many ſenators, who had taken refuge in the place, to Cæſar, who granted them their lives and liberty. Domitius, fearing the reſentment of the conqueror, had ordered one of his ſlaves, whom he uſed as a phyſician, to give him a doſe of poiſon. When he came to experience the humanity of the conqueror, he lamented his misfortune, and blamed the haſtineſs of his own reſolution. But his phyſician, who had only given him a ſleeping draught, comforted him, and received his liberty as a reward for his affection.

196 Beſieges Pompey, who eſcapes by a ſtratagem.

Pompey, thinking himſelf no longer ſafe at Capua after the reduction of Corfinium, retired to Brunduſium, with a deſign to carry the war into the eaſt, where all the governors were his creatures. Cæſar followed him cloſe; and arriving with his army before Brunduſium, inveſted the place on the land-ſide, and undertook to ſhut up the port by a ſtaccado of his own invention. But, before the work was completed, the fleet which had conveyed the two conſuls with thirty cohorts to Dyrrhachium being returned, Pompey reſolved to make his eſcape, which he conducted with all the experience and dexterity of a great officer. He kept his departure very ſecret; but, at the ſame time, made all neceſſary preparations for the facilitating of it. In the firſt place, he walled up the gates, then dug deep and wide ditches croſs all the ſtreets, except only thoſe two that led to the port; in the ditches he planted ſharp pointed ſtakes, covering them with hurdles and earth. After theſe precautions, he gave expreſs orders that all the citizens ſhould keep within doors, leſt they ſhould betray his deſign to the enemy; and then, in the ſpace of three days, embarked all his troops, except the light-armed infantry, whom he had placed on the walls; and theſe likewiſe, on a ſignal given, abandoning their poſts, repaired with great expedition to the ſhips. Cæſar, perceiving the walls unguarded, ordered his men to ſcale them, and make what haſte they could after the enemy. In the heat of the purſuit, they would have fallen into the ditches which Pompey had prepared for them, had not the Brunduſians warned them of the danger, and, by many windings and turnings, led them to the haven, where they found all the fleet under ſail, except two veſſels, which had run aground in going out of the harbour. Theſe Cæſar took, made the ſoldiers on board priſoners, and brought them aſhore.

Cæſar, ſeeing himſelf, by the flight of his rival, maſter of all Italy from the Alps to the ſea, was deſirous to follow and attack him before he was joined by the ſupplies which he expected from Aſia. But being deſtitute of ſhipping, he reſolved to go firſt to Rome, and ſettle ſome ſort of government there; and then paſs into Spain, to drive from thence Pompey's troops, who had taken poſſeſſion of that great continent, under the command of Afranius and Petreius. Before he left Brunduſium, he ſent Scribonius Curio with three legions into Sicily, and ordered Q. Valerius, one of his lieutenants, to get together what ſhips he could, and croſs over with one legion into Sardinia. Cato, who commanded in Sicily, upon the firſt news of Curio's landing there, abandoned the iſland, and retired to the camp of the conſuls at Dyrrhachium; and Q. Valerius no ſooner appeared with his ſmall fleet on Sardinia, than

195 Cæſar ...ter Rome.

Rome. than the Caralitini, now the inhabitants of Cagliari, drove out Aurelius Cotta, who commanded there for the ſenate, and put Cæſar's lieutenant in poſſeſſion both of their city and iſland.

197 Cæſar goes to Rome. In the mean time the general himſelf advanced towards Rome; and on his march wrote to all the ſenators then in Italy, deſiring them to repair to the capital, and aſſiſt him with their council. Above all, he was deſirous to ſee Cicero; but could not prevail upon him to return to Rome. As Cæſar drew near the capital, he quartered his troops in the neighbouring municipia; and then advancing to the city, out of a pretended reſpect to the ancient cuſtoms, he took up his quarters in the ſuburbs, whither the whole city crowded to ſee the famous conqueror of Gaul, who had been abſent near ten years. And now ſuch of the tribunes of the people as had fled to him for refuge reaſſumed their functions, mounted the roſtra, and endeavoured by their ſpeeches to reconcile the people to the head of their party. Marc Antony particularly, and Caſſius Longinus, two of Cæſar's moſt zealous partiſans, moved that the ſenate ſhould meet in the ſuburbs, that the general might give them an account of his conduct. Accordingly, ſuch of the ſenators as were at Rome aſſembled; when Cæſar made a ſpeech in juſtification of all his proceedings, and concluded his harangue with propoſing a deputation to Pompey, with offers of an accommodation in an amicable manner. He even deſired the conſcript fathers, to whom in appearance he paid great deference, to nominate ſome of their venerable body to carry propoſals of peace to the conſuls, and the general of the conſular army; but none of the ſenators would take upon him that commiſſion. He then began to think of providing himſelf with the neceſſary ſums for carrying on the war, and had recourſe to the public treaſury. But Metellus, one of the tribunes, oppoſed him; alleging a law forbidding any one to open the treaſury, but in the preſence and with the conſent of the conſuls. Cæſar, however, without regarding the tribune, went directly to the temple of Saturn, where the public money was kept. But the keys of the treaſury having been carried away by the conſul Lentulus, he ordered the doors to be broken open. This Metellus oppoſed: but Cæſar, in a paſſion, laying his hand on his ſword, threatened to kill him if he gave him any farther diſturbance; which ſo terrified Metellus, that he withdrew. Cæſar took out of the treaſury, which was ever after at his command, an immenſe ſum; ſome ſay, 300,000 pounds weight of gold. With this ſupply of money he raiſed troops all over Italy, and ſent governors into all the provinces ſubject to the republic.

198 Supplies himſelf with money from the public treaſury.

Cæſar now made Marc Antony commander in chief of the armies in Italy, ſent his brother C. Antonius to govern Illyricum, aſſigned Ciſalpine Gaul to Licinius Craſſus, appointed M. Æmilius Lepidus governor of the capital; and having got together ſome ſhips to cruiſe in the Adriatic and Mediterranean ſeas, he gave the command of one of his fleets to P. Cornelius Dolabella, and of the other to young Hortenſius, the ſon of the famous orator. As Pompey had ſent governors into the ſame provinces, by this means a general war was kindled in almoſt all the parts of the known world. However, Cæſar would not truſt any of his lieutenants with the conduct of the war in Spain, which was Pompey's favourite province, but took it upon himſelf; and having ſettled his affairs in great haſte at Rome, returned to Ariminum, aſſembled his legions there, and paſſing the Alps, entered Tranſalpine Gaul. There he was informed that the inhabitants of Marſeilles had reſolved to refuſe him entrance into their city; and that L. Domitius Ahenobarbus, whom he had generouſly pardoned and ſet at liberty after the reduction of Corfinium, had ſet ſail for Marſeilles with ſeven galleys, having on board a great number of his clients and ſlaves, with a deſign to raiſe the city in favour of Pompey. Cæſar, thinking it dangerous to let the enemy take poſſeſſion of ſuch an important place, ſent for the 15 chief magiſtrates of the city, and adviſed them not to begin a war with him, but rather follow the example of Italy, and ſubmit. The magiſtrates returned to the city, and ſoon after informed him that they were to ſtand neuter; but in the mean time Domitius arriving with his ſmall ſquadron, was received into the city, and declared general of all their forces. Hereupon Cæſar immediately inveſted the town with three legions, and ordered twelve galleys to be built at Arelas, now *Arles*, in order to block up the port. But as the ſiege was like to detain him too long, he left C. Trebonius to carry it on, and D. Brutus to command the fleet, while he continued his march into Spain, where he began the war with all the valour, ability, and ſucceſs of a great general. Pompey had three generals in this continent, which was divided into two Roman provinces. Varro commanded in Farther Spain; and Petreius and Afranius, with equal power, and two conſiderable armies, in Hither Spain. Cæſar, while he was yet at Marſeilles, ſent Q. Fabius, one of his lieutenants, with three legions, to take poſſeſſion of the paſſes of the Pyrenees, which Afranius had ſeized. Fabius executed his commiſſion with great bravery, entered Spain, and left the way open for Cæſar, who quickly followed him. As ſoon as he had croſſed the mountains, he ſent out ſcouts to obſerve the ſituation of the enemy; by whom he was informed, that Afranius and Petreius having joined their forces, conſiſting of five legions, 20 cohorts of the natives, and 5000 horſe, were advantageouſly poſted on an hill of an eaſy aſcent in the neighbourhood of Ilerda, now *Lerida*, in Catalonia. Upon this advice Cæſar advanced within ſight of the enemy, and encamped in a plain between the Sicoris and Cinga, now the *Segre* and *Cinca*. Between the eminence on which Afranius had poſted himſelf, and the city of Ilerda, was a ſmall plain, and in the middle of it a riſing ground, which Cæſar attempted to ſeize, in order to cut off by that means the communication between the enemy's camp and the city, from whence they had all their proviſions. This occaſioned a ſharp diſpute between three of Cæſar's legions and an equal number of the enemy, which laſted five hours with equal ſucceſs, both parties claiming the victory. But after all, Afranius's men, who had firſt ſeized the poſt, maintained themſelves in poſſeſſion of it in ſpite of Cæſar's utmoſt efforts. Two days after this battle, continual rains, with the melting of the ſnow on the mountains, ſo ſwelled the two rivers between which Cæſar was encamped, that they overflowed, broke down his bridges, and laid under water the neighbouring country to a great diſtance. This cut off the communication between his camp and the cities that had declared for him; and reduced him to ſuch ſtraits, that his army was ready to die for famine, wheat being ſold in his

199 Is reduced to great diſtreſs in Spain.

[illegible] *per* bushel, that is, 1 l. 12 s. [illegible] sterling. He tried to rebuild his bridges, but in vain; the violence of the stream rendering all his endeavours fruitless.

Upon the news of Cæsar's distress, Pompey's party at Rome began to take courage. Several persons of distinction went to congratulate Afranius's wife on the success of her husband's arms in Spain. Many of the senators who had hitherto stood neuter, hastened to Pompey's camp, taking it for granted that Cæsar was reduced to the last extremity, and all hopes of his party lost. Of this number was Cicero; who, without any regard to the remonstrance of Atticus, or the letters Cæsar himself wrote to him, desiring him to join neither party, he left Italy, and landed at Dyrrhachium, where Pompey received him with great marks of joy and friendship. But the joy of Pompey's party was not long-lived. For Cæsar, after having attempted several times in vain to rebuild the bridges, caused boats to be made with all possible expedition; and while the enemy were diverted by endeavouring to intercept the succours that were sent him from Gaul, he laid hold of that opportunity to convey his boats in the night on carriages 22 miles from his camp; where with wonderful quickness a great detachment passed the Sicoris, and encamping on the opposite bank unknown to the enemy, built a bridge in two days, opened a communication with the neighbouring country, received the supplies from Gaul, and relieved the wants of his soldiers. Cæsar being thus delivered from danger, pursued the armies of Afranius and Petreius with such superior address and conduct, that he forced them to submit without coming to a battle, and by that means became master of all Hither Spain. The two generals disbanded their troops, sent them out of the province, and returned to Italy, after having solemnly promised never to assemble forces again, or make war upon Cæsar. Upon the news of the reduction of Hither Spain, the Spaniards in Farther Spain, and one Roman legion, deserted from Varro, Pompey's governor in that province, which obliged him to surrender his other legion and all his money.

200 Overcomes his difficulties, and reduces all Spain.

Cæsar having thus reduced all Spain in a few months, appointed Cassius Longinus to govern the two provinces with four legions, and then returned to Marseilles; which city was just upon the point of surrendering after a most vigorous resistance. Though the inhabitants had by their late treachery deserved a severe punishment, yet he granted them their lives and liberty; but stripped their arsenals of arms, and obliged them to deliver up all their ships. From Marseilles Cæsar marched into Cisalpine Gaul; and from thence hastened to Rome, where he laid the foundation of his future grandeur. He found the city in a very different state from that in which he had left it. Most of the senators and magistrates were fled to Pompey at Dyrrhachium. However, there were still prætors there; and among them M. Æmilius Lepidus, who was afterwards one of the triumvirs with Octavius and Marc Antony. The prætor, to ingratiate himself with Cæsar, nominated him dictator of his own authority, and against the inclination of the senate. Cæsar accepted the new dignity; but neither abused his power, as Sylla had done, nor retained it so long. During the 11 days of his dictatorship, he governed with great moderation, and gained the affections both of the people, and the patricians. He recalled the exiles, granted the rights and privileges of Roman citizens to all the Gauls beyond the Po, and, as pontifex maximus, filled up the vacancies of the sacerdotal colleges with his own friends. Though it was expected that he would have absolutely cancelled all debts contracted since the beginning of the troubles, he only reduced the interest to one-fourth. But the chief use he made of his dictatorship was to preside at the election of consuls for the next year, when he got himself, and Servilius Isauricus, one of his most zealous partisans, promoted to that dignity.

201 Returns to Rome, and is created dictator.

Rome.

202 Follows Pompey into the east.

And now being resolved to follow Pompey, and carry the war into the east, he set out for Brundusium, whither he had ordered 12 legions to repair with all possible expedition. But on his arrival he found only five there. The rest, being afraid of the dangers of the sea, and unwilling to engage in a new war, had marched leisurely, complaining of their general for allowing them no respite, but hurrying them continually from one country to another. However, Cæsar did not wait for them, but set sail with only five legions and 600 horse in the beginning of January. While the rest were waiting at Brundusium for ships to transport them over into Epirus, Cæsar arrived safe with his five legions in Chaonia, the northern part of Epirus, near the Ceraunian mountains. There he landed his troops, and sent the ships back to Brundusium to bring over the legions that were left behind. The war he was now entering upon was the most difficult he had yet undertaken. Pompey had for a whole year been assembling troops from all the eastern countries. When he left Italy, he had only five legions; but since his arrival at Dyrrhachium he had been reinforced with one from Sicily, another from Crete, and two from Syria. Three thousand archers, six cohorts of slingers, and seven thousand horse, had been sent him by princes in alliance with Rome. All the free cities of Asia had reinforced his army with their best troops; nay, if we give credit to an historical poet, succours were brought him from the Indus and the Ganges to the east, and from Arabia and Ethiopia to the south; at least it is certain, that Greece, Asia Minor, Syria, Palestine, Egypt, and all the nations from the Mediterranean to the Euphrates, took up arms in his favour. He had almost all the Roman knights, that is, the flower of the young nobility, in his squadrons, and his legions consisted mostly of veterans inured to dangers and the toils of war. Pompey himself was a general of great experience and address; and had under him some of the best commanders of the republic, who had formerly conducted armies themselves. As for his navy, he had above 500 ships of war, besides a far greater number of small vessels, which were continually cruising on the coasts, and intercepting such ships as carried arms or provisions to the enemy. He had likewise with him above 200 senators, who formed a more numerous senate than that at Rome. Cornelius Lentulus and Claudius Marcellus, the last year's consuls, presided in it; but under the direction of Pompey their protector, who ordered them to assemble at Thessalonica, where he built a stately hall for that purpose. There, in one of their assemblies, at the motion of Cato, it was decreed, that no Roman citizens should be put to death but in battle, and that no city subject to the republic should be sacked. At the same time the con-

Rome. conſcript fathers aſſembled at Theſſalonica decreed, that they alone repreſented the Roman ſenate, and that thoſe who reſided at Rome were encouragers of tyranny, and friends to the tyrant. And indeed, as the flower of the nobility was with Pompey, and the moſt virtuous men in the republic had taken refuge in his camp, he was generally looked upon as the only hope and ſupport of the public liberty. Hence many perſons of eminent probity, who had hitherto ſtood neuter, flocked to him from all parts. Among theſe were young Brutus, who afterwards conſpired againſt Cæſar, Tidius Sextius, and Labienus. Brutus, whoſe father had been put to death in Galatia by Pompey's order, had never ſpoken to him, or ſo much as ſaluted him ſince that time: but as he now looked upon him as the defender of the public liberty, he joined him, ſacrificing therein his private reſentment to the intereſt of the public. Pompey received him with great joy, and was willing to confer upon him ſome command; but he declined the offer. Tidius Sextius, though extremely old and lame, yet left Rome, and went as far as Macedonia to join Pompey there. Labienus likewiſe forſook his old benefactor, under whom he had ſerved during the whole courſe of the Gauliſh war, and went over to his rival, though Cæſar had appointed him commander in chief of all the forces on the other ſide the Alps. In ſhort, Pompey's party grew into ſuch reputation, that his cauſe was generally called the *good cauſe*, while Cæſar's adherents were looked upon as enemies to their country, and abettors of tyranny.

203 Makes propoſals of accommodation, which are rejected.

As ſoon as Cæſar landed, he marched directly to Oricum, the neareſt city in Epirus, which was taken without oppoſition. The like ſucceſs attended him at Apollonia, which was in no condition to ſtand a ſiege; and theſe two conqueſts opened a way to Dyrrhachium, where Pompey had his magazines of arms and proviſions. This ſucceſs, however, was interrupted by the news that the fleet which he had ſent back to Brunduſium to tranſport the reſt of his troops had been attacked by Bibulus, one of Pompey's admirals, who had taken 30, and inhumanly burnt them with the ſeamen on board. This gave Cæſar great uneaſineſs, eſpecially as he heard that Bibulus, with 110 ſhips of war, had taken poſſeſſion of all the harbours between Salonium and Oricum; ſo that the legions at Brunduſium could not venture to croſs the ſea without great danger of falling into the enemy's hands. By this Cæſar was ſo much embarraſſed, that he made propoſals of accommodation upon very moderate terms: being no other than that both Pompey and he ſhould diſband their armies within three days, renew their former friendſhip with ſolemn oaths, and return together to Italy. Theſe propoſals were ſent by Vibullius Rufus, an intimate friend of Pompey, whom Cæſar had twice taken priſoner. Pompey, however, probably elated with his late good fortune, anſwered that he would not hearken to any terms, leſt it ſhould be ſaid that he owed his life and return to Italy to Cæſar's favour. However, the latter again ſent one Vatinius to confer with Pompey about a treaty of peace. Labienus was appointed to receive the propoſals; but while they were conferring together, a party of Pompey's men coming up to them, diſcharged their darts at Vatinius and thoſe who attended him. Some of the guards were wounded, and Vatinius narrowly eſcaped with his life.

In the mean time Cæſar advanced towards Dyrrhachium, in hopes of ſurpriſing that important place; but Pompey unexpectedly appearing, he halted on the other ſide of the river Apſus, where he entrenched himſelf as having but a ſmall number of troops in compariſon of the formidable army which attended Pompey. The latter, however, notwithſtanding his ſuperiority, durſt not croſs the river in Cæſar's ſight; ſo that the two armies continued for ſome time quiet in their reſpective camps. Cæſar wrote letter after letter to Marc Antony, who commanded the legions he had left in Italy, to come to his aſſiſtance; but receiving no anſwer, Cæſar diſguiſed himſelf in the habit of a ſlave, and with all imaginable ſecrecy went on board a fiſherman's bark, with a deſign to go over to Brunduſium, though the enemy's fleet was cruiſing on the coaſts both of Greece and Italy. This deſign, however, miſcarried, by reaſon of the boat being put back by contrary winds; and thus Cæſar was reſtored to his ſoldiers, who had been very uneaſy at his abſence. He was no ſooner landed than he diſpatched Poſthumius, one of his lieutenants, with moſt preſſing orders to Marc Antony, Gabinius, and Calenus, to bring the troops to him at all adventures. Gabinius, unwilling to expoſe all the hopes of his general to the hazards of the ſea, thought it ſafer to march a great way about by Illyricum, and therefore engaged all the legionaries he could to follow him by land. But the Illyrians, who had, unknown to him, declared for Pompey, fell unexpectedly upon him and killed him and his men, not one eſcaping. Marc Antony and Calenus, who went by ſea, were in the greateſt danger from one of Pompey's admirals; but had the good luck to bring their troops ſafe to ſhore at Nyphæum, in the neighbourhood of Apollonia. As ſoon as it was known that Antony was landed, Pompey marched to prevent his joining Cæſar. On the other hand, Cæſar inſtantly decamped, and haſtening to the relief of his lieutenant, joined him before Pompey came up. Then Pompey, not caring to engage them when united, retired to an advantageous poſt in the neighbourhood of Dyrrhachium, known by the name of *Aſparagium*, and there encamped. Cæſar having thus at length got all his troops together, reſolved to finiſh the war by one general action, and determine the fate of the world, either by his own death or by that of his rival. To this end he offered Pompey battle, and kept his army a great while drawn up in ſight of the enemy. But Pompey declining an engagement, he decamped, and turned towards Dyrrhachium, as if he deſigned to ſurpriſe it, hoping by this means to draw Pompey into the plain. But Pompey, looking upon the taking of Dyrrhachium as a chimerical project, followed Cæſar at ſome diſtance, and letting him draw near to the city, encamped on a hill called *Petra*, which commanded the ſea, whence he could be ſupplied with proviſions from Greece and Aſia, while Cæſar was forced to bring corn by land from Epirus, at a vaſt expence, and through many dangers.

This inconvenience put Cæſar upon a new deſign, which was to ſurround an army far more numerous than his own, and, by ſhutting them up within a narrow tract of ground, diſtreſs them as much for want of forage as his troops were diſtreſſed for want of corn. Purſuant to this deſign, he drew a line of circumvallation from the ſea quite round Pompey's camp, and kept him

204 Beſieges Pompey in his camp.

Rome. him ſo cloſely blocked up, that though his men were plentifully ſupplied with proviſions by ſea, yet the horſes of his army began ſoon to die in great numbers for want of forage. Cæſar's men, though in the utmoſt diſtreſs for want of corn, yet bore all with incredible cheerfulneſs; proteſting, that they would rather live upon the bark of trees than ſuffer Pompey to eſcape, now they had him in their power. Cæſar tells us, that in this extremity ſuch of the army as had been in Sarmatia and the way of making bread of a certain root called *chara*, which they uſed to mix with milk; and that when the enemy inſulted them on account of the ſtarving condition which they were in, they threw ſeveral of theſe loaves among them, to put them out of all hopes of ſubduing them by famine. "So long as the earth produces ſuch roots (ſaid they), we will not let Pompey eſcape." At length Pompey, alarmed at the diſtempers which began to prevail in his army, made ſeveral attempts to break through the barriers that inclоſed him, but was always repulſed with loſs. At length being reduced to the utmoſt extremity for want of forage, he reſolved at all events to force the enemy's lines and eſcape. With the aſſiſtance, therefore, and by the advice of two deſerters, he embarked his archers, ſlingers, and light-armed infantry, and marching himſelf by land at the head of 60 cohorts, went to attack
205 Is driven from ſome of his poſts. that part of Cæſar's lines which was next to the ſea, and not yet quite finiſhed. He ſet out from his camp in the dead of the night, and arriving at the poſt he deſigned to force by break of day, he began the attack by ſea and land at the ſame time. The ninth legion, which defended that part of the lines, made for ſome time a vigorous reſiſtance; but being attacked in the rear by Pompey's men, who came by ſea, and landed between Cæſar's two lines, they fled with ſuch precipitation, that the ſuccours Marcellinus ſent them from a neighbouring poſt could not ſtop them. The enſign who carried the eagle at the head of the routed legion was mortally wounded; but nevertheleſs, before he died, had preſence of mind enough to conſign the eagle to the cavalry of the party, deſiring them to deliver it to Cæſar. Pompey's men purſued the fugitives, and made ſuch a ſlaughter of them, that all the centurions of the firſt cohort were cut off except one. And now Pompey's army broke in like a torrent upon the poſts Cæſar had fortified, and were advancing to attack Marcellinus, who guarded a neighbouring fort; but Marc Antony coming very ſeaſonably to his relief with 12 cohorts, they thought it adviſable to retire.

206 Cæſar deſcribed in great danger. Soon after Cæſar himſelf arrived with a ſtrong reinforcement, and poſted himſelf on the ſhore, in order to prevent ſuch attempts for the future. From this poſt he obſerved an old camp which he had made within the place where Pompey was incloſed, but afterwards abandoned. Upon his quitting it, Pompey had taken poſſeſſion of it, and left a legion to guard it. This poſt Cæſar reſolved to reduce, hoping to repair the loſs he had ſuſtained on this unfortunate day, by taking the legion which Pompey had poſted there. Accordingly, he advanced ſecretly at the head of 33 cohorts in two lines: and arriving at the old camp before Pompey could have notice of his march, attacked it with great [illegible] and the firſt line forced it, notwithſtanding the reſiſtance of Titus Pulio, and penetrated to the rampart, while on the right it was [illegible]. But here his fortune changed on a ſudden. His right wing, in Rome. looking for an entrance into the camp, marched along the outſide of a trench which Cæſar had formerly carried on from the left angle of his camp, about 400 paces, to a neighbouring river. This trench they miſtook for the rampart of the camp; and being led away by that miſtake from their left wing, they were ſoon after prevented from rejoining it by the arrival of Pompey, who came up at the head of a legion and a large body of horſe. Then the legion which Cæſar had attacked taking courage, made a briſk ſally, drove his men back to the firſt entrenchment which they had ſeized, and there put them in great diſorder while they were attempting to paſs the ditch. Pompey, in the mean time, falling upon them with his cavalry in flank, completed their defeat; and then flying to the enemy's right wing, which had paſſed the trench mentioned above, and was ſhut up between that and the ramparts of the old camp, made a moſt dreadful ſlaughter of them. The trench was filled with dead bodies, many falling into it in that diſorder, and others paſſing over them and preſſing them to death.

In this diſtreſs, Cæſar did all he could to ſtop the flight of his legionaries, but to no purpoſe: the ſtandard-bearers themſelves threw down the Roman eagles when Cæſar endeavoured to ſtop them, and left them in the hands of the enemy, who on this occaſion took 32 ſtandards; a diſgrace which Cæſar had never ſuffered before. He was himſelf in no ſmall danger of falling by the hand of one of his own men, whom he took hold of when flying, bidding him ſtand and face about; but the man, apprehenſive of the danger he was in, drew his ſword, and would have killed him, had not one of his guards prevented the blow by cutting off his arm. Cæſar loſt on this occaſion 960 of his foot, 400 of his horſe, 5 tribunes, and 32 centurions.

207 He retrieves his affairs. This loſs and diſgrace greatly mortified Cæſar, but did not diſcourage him. After he had by his lenity and eloquent ſpeeches recovered the ſpirit of his troops, he decamped, and retired in good order to Apollonia, where he paid the army, and left his ſick and wounded. From thence he marched into Macedon, where Scipio Metellus, Pompey's father-in-law, was encamped. He hoped either to draw his rival into ſome plain, or to overpower Scipio if not aſſiſted. He met with great difficulties on his march, the countries through which he paſſed refuſing to ſupply his army with proviſions; to ſuch a degree was his reputation ſunk ſince his laſt defeat! On his entering Theſſaly he was met by Domitius, one of his lieutenants, whom he had ſent with three legions to reduce Epirus. Having now got all his forces together, he marched directly to Gomphi, the firſt town of Theſſaly, which had been formerly in his intereſt but now declared againſt him. Whereupon he attacked it with ſo much vigour, that though the garriſon was very numerous, and the walls were of an uncommon height, he made himſelf maſter of it in a few hours. From hence he marched to Metropolis another conſiderable town of Theſſaly, which immediately ſurrendered; as did all the other cities of the country, except Lariſſa, of which Scipio had made himſelf maſter.

On the other hand, Pompey being continually importuned by the ſenators and officers of his army, left his camp at Dyrrachium, and followed Cæſar, [illegible] re-

Rome. resolved not to give him battle, but rather to distress him by keeping close at his heels, straitening his quarters, and cutting off his convoys. As he had frequent opportunities of coming to an engagement, but always declined it, his friends and subalterns began to put ill constructions on his dilatoriness to his face. Rome.

208 Pompey resolves to come to an engagement.

These, together with the complaints of his soldiers, made him at length resolve to venture a general action. With this design he marched into a large plain near the cities of Pharsalia and Thebes; which latter was also called *Philippi*, from Philip king of Macedon, and the father of Perses, who, having reduced the Thebans, placed a colony of Macedonians in their city. This plain was watered by the Enipeus, and surrounded on all sides by high mountains; and Pompey, who was still averse from venturing an engagement, pitched his camp on the declivity of a steep mountain, in a place altogether inaccessible. There he was joined by Scipio his father-in-law, at the head of the legions which he had brought with him from Syria and Cilicia. But notwithstanding this reinforcement, he continued irresolute, and unwilling to put all to the issue of a single action; being still convinced of the wisdom of his maxim, that it was better to destroy the enemy by fatigues and want, than to engage an army of brave veterans, who were in a manner reduced to despair. As he put off from day to day, under various pretences, descending into the plain where Cæsar was encamped, his officers forced him to call a council of war, when all to a man were for venturing a general action the very next day. Thus was Pompey obliged to sacrifice his own judgment to the blind ardour of the multitude; and the necessary measures were taken for a general engagement.

209 Is totally defeated. † See Plutarch.

The event of this battle was in the highest degree fortunate for Cæsar †; who resolved to pursue his advantage, and follow Pompey to whatever country he should retire. Hearing, therefore, of his being at Amphipolis, he sent off his troops before him, and then embarked on board a little frigate in order to cross the Hellespont; but in the middle of the strait, he fell in with one of Pompey's commanders, at the head of ten ships of war. Cæsar, no way terrified at the superiority of his force, bore up to him, and commanded him to submit. The other instantly obeyed, awed by the terror of Cæsar's name, and surrendered himself and his fleet at discretion.

From thence he continued his voyage to Ephesus, then to Rhodes; and being informed that Pompey had been there before him, he made no doubt but that he was fled to Egypt; wherefore, losing no time, he set sail for that kingdom, and arrived at Alexandria with about 4000 men; a very inconsiderable force to keep such a powerful kingdom under subjection. But he was now grown so secure in his good fortune, that he expected to find obedience everywhere. Upon his landing, the first accounts he received were of Pompey's miserable end, who had been assassinated by orders of the treacherous king as soon as he went on shore; and soon afterwards the murderers came with his head and ring as a most grateful present to the conqueror. But Cæsar turned away from it with horror, and shortly after ordered a magnificent tomb to be built to his memory on the spot where he was murdered; and a temple near the place, to Nemesis, who was the goddess that punished those that were cruel to men in adversity.

210 Is murdered in Egypt.

It should seem that the Egyptians by this time had some hopes of breaking off all alliance with the Romans; which they considered, as in fact it was, but a specious subjection. They first began to take offence at Cæsar's carrying the ensigns of Roman power before him as he entered the city. Photinus, the eunuch, also treated him with disrespect, and even attempted his life. Cæsar, however, concealed his resentment till he had a force sufficient to punish his treachery; and sending privately for the legions which had been formerly enrolled for Pompey's service, as being the nearest to Egypt, he in the mean time pretended to repose an entire confidence in the king's minister. However, he soon changed his manner when he found himself in no danger from his attempts; and declared, that, as being a Roman consul, it was his duty to settle the succession to the Egyptian crown.

211 The Egyptians quarrel with Cæsar,

There were at that time two pretenders to the crown of Egypt: Ptolemy, the acknowledged king; and the celebrated Cleopatra his sister; who, by the custom of the country, was also his wife, and, by their father's will, shared jointly in the succession. However, not being contented with a bare participation of power, she aimed at governing alone; but being opposed in her views by the Roman senate, who confirmed her brother's title to the crown, she was banished into Syria with Arsinoe her younger sister.

Cæsar, however, gave her new hopes of obtaining the kingdom, and sent both for her and her brother to plead their cause before him. Photinus, the young king's guardian, who had long borne the most inveterate hatred as well to Cæsar as to Cleopatra, disdained this proposal, and backed his refusal by sending an army of 20,000 men to besiege him in Alexandria. Cæsar bravely repulsed the enemy for some time; but finding the city of too great extent to be defended by so small an army as he then had with him, he retired to the palace, which commanded the harbour, where he purposed to make a stand. Achillas, who commanded the Egyptians, attacked him there with great vigour, and still aimed at making himself master of the fleet that lay before the palace. Cæsar, however, too well knew the importance of those ships in the hands of an enemy; and therefore burnt them all in spite of every effort to prevent it. He next possessed himself of the isle of Pharos, which was the key to the Alexandrian port, by which he was enabled to receive the supplies sent him from all sides; and in this situation he determined to withstand the united force of all the Egyptians.

212 And besiege him in Alexandria.

In the mean time, Cleopatra having heard of the present turn in her favour, resolved to depend rather on Cæsar's favour for gaining the government than her own forces. She had, in fact, assembled an army in Syria to support her claims; but now judged it the wisest way to rely entirely on the decision of her fellow-elected judge. But no arts, as she justly conceived, were so likely to influence Cæsar, as the charms of her person. The difficulty was how to get at Cæsar, as his enemies were in possession of all the avenues that led to the palace. For this purpose, she went on board a small vessel, and in the evening landed near the palace; where, being wrapped up in a coverlet, she was carried

carried by one Apollodorus into the very chamber of Cæſar. Her addreſs at firſt pleaſed him; but her careſſes, which were carried beyond the bounds of innocence, entirely brought him over to ſecond her claims.

While Cleopatra was thus employed in forwarding her own views, her ſiſter Arſinoe was alſo ſtrenuouſly engaged in the camp in purſuing a ſeparate intereſt. She had found means, by the aſſiſtance of one Ganymede her confidant, to make a large diviſion in the Egyptian army in her favour; and ſoon after cauſed Achillas to be murdered, and Ganymede to take the command in his ſtead, and to carry on the ſiege with greater vigour than before. Ganymede's principal effort was by letting in the ſea upon thoſe canals which ſupplied the palace with freſh water; but this inconvenience Cæſar remedied by digging a great number of wells. His next endeavour was to prevent the junction of Cæſar's 24th legion, which he twice attempted in vain. He ſoon after made himſelf maſter of a bridge which joined the iſle of Pharos to the continent, from which poſt Cæſar was reſolved to diſlodge him. In the heat of action, ſome mariners came and joined the combatants; but being ſeized with a panic, inſtantly fled, and ſpread a general terror through the army. All Cæſar's endeavours to rally his forces were in vain, the conſtaſion was paſt remedy, and numbers were drowned or put to the ſword in attempting to eſcape; on which, ſeeing the irremediable diſorder of his troops, he retired to a ſhip in order to get to the palace that was juſt oppoſite. However, he was no ſooner on board than great crowds entered at the ſame time with him; upon which, apprehenſive of the ſhip's ſinking, he jumped into the ſea, and ſwam 200 paces to the fleet that lay before the palace.

The Alexandrians, finding their efforts to take the palace ineffectual, endeavoured at leaſt to get their king out of Cæſar's power, as he had ſeized upon his perſon in the beginning of their diſputes. For this purpoſe they made uſe of their cuſtomary arts of diſſimulation, profeſſing the utmoſt deſire for peace, and only wanting the preſence of their lawful prince to give a ſanction to the treaty. Cæſar, who was ſenſible of their perfidy, nevertheleſs concealed his ſuſpicions, and gave them their king, as he was under no apprehenſions from the abilities of a boy. Ptolemy, however, the inſtant he was let at liberty, inſtead of promoting peace, made every effort to give vigour to hoſtilities.

213 His artifices defeated.

In this manner Cæſar was hemmed in for ſome time: but he was at laſt relieved from this mortifying ſituation by Mithridates Pergamenus, one of his moſt faithful partiſans; who, collecting a numerous army in Syria, marched into Egypt, took the city of Peluſium, repulſed the Egyptian army with loſs, and at laſt, joining with Cæſar, attacked their camp, and made a great ſlaughter of the Egyptians. Ptolemy himſelf, attempting to eſcape on board a veſſel that was ſailing down the river, was drowned by the ſhip's ſinking; and Cæſar thus became maſter of all Egypt without any further oppoſition. He therefore appointed, that Cleopatra and her younger brother, who was then but an infant, ſhould jointly govern, according to the inſtitution of their father's will; and drove out Arſinoe with Ganymede to Aſia.

Cæſar [illegible] a while ſeemed to relax from the uſual activity of his conduct, captivated with the charms of Cleopatra. Inſtead of quitting Egypt to go and quell the remains of Pompey's party, he abandoned himſelf to his pleaſures, paſſing whole nights in feaſts with the young queen. He even reſolved to attend her up the Nile into Ethiopia; but the brave veterans, who had long followed his fortune, boldly reprehended his conduct, and refuſed to be partners in ſo infamous an expedition. Thus, at length, rouſed from his lethargy, he left Cleopatra, by whom he had a ſon who was afterwards named *Cæſario*, in order to oppoſe Pharnaces the king of Pontus, who had now made ſome inroads upon the dominions of Rome. Here he was attended with the greateſt ſucceſs, as we have related under the article PONTUS; and having ſettled affairs in this part of the empire, as well as time would permit, he embarked for Italy, where he arrived ſooner than his enemies could expect, but not before his affairs there abſolutely required his preſence. He had been, during his abſence, created conſul for five years, dictator for one year, and tribune of the people for life. But Antony, who in the mean time governed in Rome for him, had filled the city with riot and debauchery, and many commotions enſued, which nothing but the arrival of Cæſar could appeaſe. However, by his moderation and humanity, he ſoon reſtored tranquillity to the city, ſcarce making any diſtinction between thoſe of his own and the oppoſite party. Thus having, by gentle means, reſtored his authority at home, he prepared to march into Africa, where Pompey's party had found time to rally under Scipio and Cato, aſſiſted by Juba king of Mauritania. But the vigour of his proceedings had like to have been retarded by a mutiny in his whole army. Thoſe veteran legions, who had hitherto conquered all that came before them, began to murmur for not having received the rewards which they had expected for their paſt ſervices, and now inſiſted upon their diſcharge. However, Cæſar found means to quell the mutiny; and then, according to his uſual diligence, landed with a ſmall party in Africa, the reſt of the army following ſoon after. After many movements and ſkirmiſhes, he reſolved at laſt to come to a deciſive battle. For this purpoſe he inveſted the city of Tapſus, ſuppoſing that Scipio would attempt its relief, which turned out according to his expectation. Scipio, joining with the young king of Mauritania, advanced with his army, and encamping near Cæſar, they ſoon came to a general battle. Cæſar's ſucceſs was as uſual; the enemy received a complete and final overthrow, with little loſs on his ſide. Juba, and Petreius his general, killed each other in deſpair; Scipio, attempting to eſcape by ſea into Spain, fell in among the enemy, and was ſlain; ſo that, of all the generals of that undone party, Cato was now alone remaining.

214 Arrives in Italy, and ſoon after undertakes an expedition into Africa.

215 Defeats the partiſans of Pompey.

This extraordinary man, having retired into Africa after the battle of Pharſalia, had led the wretched remains of that defeat through burning deſerts and tracts infeſted with ſerpents of various malignity, and was now in the city of Utica, which he had been left to defend. Still, however, in love with even the ſhow of Roman government, he had formed the principal citizens into a ſenate, and conceived a reſolution of holding out the town. He accordingly animated his ſenators upon the occaſion, and exhorted them to ſtand a ſiege; but finding his admonitions ineffectual, he ſtabbed himſelf with his ſword [illegible]. Upon his death, ſays Cato, the

216 Cato kills himſelf.

Rome. the war in Africa being completed, Cæſar returned in triumph to Rome; and, as if he had abridged all his former triumphs only to increaſe the ſplendor of this, the citizens were aſtoniſhed at the magnificence of the proceſſion, and the number of the countries he had ſubdued. It laſted four days: the firſt was for Gaul, the ſecond for Egypt, the third for his victories in Aſia, and the fourth for that over Juba in Africa. To every one of his ſoldiers he gave a ſum equivalent to about 150 l. Sterling, double that ſum to the centurions, and four times as much to the ſuperior officers. The citizens alſo ſhared his bounty; to every one of whom he diſtributed 10 buſhels of corn, 10 pounds of oil, and a ſum of money equal to about two pounds Sterling. He, after this, entertained the people at about 20,000 tables, treated them with the combat of gladiators, and filled Rome with a concourſe of ſpectators from every part of Italy.

217 Honours heaped upon him at Rome.

The people now ſeemed eager only to find out new modes of homage and unuſual methods of adulation for their great enſlaver. He was created, by a new title *Magiſter Morum*, or Maſter of the Morals of the People; he received the title of *Emperor*, *Father of his country*; his perſon was declared ſacred; and, in ſhort, upon him alone were devolved for life all the great dignities of the ſtate. It muſt be owned, however, that no ſovereign could make a better uſe of his power. He immediately began his empire by repreſſing vice and encouraging virtue. He communicated the power of judicature to the ſenators and the knights alone, and by many ſumptuary laws reſtrained the ſcandalous luxuries of the rich. He propoſed rewards to all ſuch as had many children; and took the moſt prudent methods to repeopling the city, that had been exhauſted in the late commotions; and beſides his other works, he greatly reformed the kalendar.

Having thus reſtored proſperity once more to Rome, he again found himſelf under a neceſſity of going into Spain, to oppoſe an army which had been raiſed there under the two ſons of Pompey, and Labienus his former general. He proceeded in this expedition with his uſual celerity, and arrived in Spain before the enemy thought him yet departed from Rome. Cneius and Sextus, Pompey's ſons, profiting by their unhappy father's example, reſolved as much as poſſible to protract the war; ſo that the firſt operations of the two armies were ſpent in ſieges and fruitleſs attempts to ſurpriſe each other. At length Cæſar, after taking many cities from the enemy, and purſuing young Pompey with unwearied perſeverance, compelled him to come to a battle upon the plains of Munda.

218 Becomes maſter of the whole empire by his victory at Munda.

After a moſt obſtinate engagement, Cæſar gained a complete victory (ſee Munda); and having now ſubdued all his enemies, he returned to Rome for the laſt time to receive new dignities and honours, and to enjoy an accumulation of all the great offices of the ſtate. Still, however, he pretended to a moderation in the enjoyment of his power: he left the conſuls to be named by the people; but as he poſſeſſed all the authority of the office, it from this time began to ſink into contempt. He enlarged the number of ſenators alſo; but as he had previouſly deſtroyed their power, their new honours were but empty titles. He took care to pardon all who had been in arms againſt him, but not till he had deprived them of the power of reſiſtance. He even ſet up once more the ſtatues of Pompey; which, however, as Cicero obſerved, he only did to ſecure his own. The reſt of this extraordinary man's life was employed for the advantage of the ſtate. He adorned the city with magnificent buildings; he rebuilt Carthage, and Corinth ſending colonies to both cities; he undertook to level ſeveral mountains in Italy, to drain the Pontine marſhes near Rome, and deſigned to cut through the iſthmus of Peloponneſus. Thus he formed mighty projects and deſigns beyond the limits of the longeſt life; but the greateſt of all was his intended expedition againſt the Parthians, by which he deſigned to revenge the death of Craſſus; then to paſs through Hyrcania, and enter Scythia along the banks of the Caſpian ſea; from thence to open himſelf a way through the immeaſurable foreſts of Germany into Gaul, and ſo return to Rome. Theſe were the aims of ambition: but the jealouſy of a few individuals put an end to them all.

Rome.

219 His vaſt deſigns.

The ſenate, with an adulation which marked the degeneracy of the times, continued to load Cæſar with freſh honours, and he continued with equal vanity to receive them. They called one of the months of the year after his name; they ſtamped money with his image; they ordered his ſtatue to be ſet up in all the cities of the empire; they inſtituted public ſacrifices on his birth-day; and talked, even in his life-time, of enrolling him in the number of their gods. Antony, at one of their public feſtivals, foolihly ventured to offer him a diadem; but he put it back again, refuſing it ſeveral times, and receiving at every refuſal loud acclamations from the people. One day, when the ſenate ordered him ſome particular honours, he neglected to riſe from his ſeat; and from that moment is ſaid to have been marked for deſtruction. It began to be rumoured that he intended to make himſelf king; for though in fact he already was ſo, the people, who had an utter averſion to the name, could not bear his aſſuming the title. Whether he really deſigned to aſſume that empty honour muſt now forever remain a ſecret; but certain it is, that the unſuſpecting openneſs of his conduct marked ſomething like a confidence in the innocence of his intentions. When informed by thoſe about him of the jealouſies of many perſons who envied his power, he was heard to ſay, That he had rather die once by treaſon, than to live continually in the apprehenſion of it: and to convince the world how little he had to apprehend from his enemies, he diſbanded his company of Spaniſh guards, which facilitated the enterpriſe againſt his life.

220 A conſpiracy formed againſt him.

A deep-laid conſpiracy was formed againſt him, compoſed of no leſs than 60 ſenators. At the head of this conſpiracy was Brutus, whoſe life Cæſar had ſpared after the battle of Pharſalia, and Caſſius, who had been pardoned ſoon after, both praetors for the preſent year. Brutus made it his chief glory to have been deſcended from that Brutus who firſt gave liberty to Rome; and from a deſire of following his example, broke all the ties of private friendſhip, and entered into a conſpiracy which was to deſtroy his benefactor. Caſſius, on the other hand, was implacable and proud, and hated Cæſar's perſon ſtill more than his power. He had often ſought an opportunity of gratifying his revenge by aſſaſſination, which took riſe rather from private than public motives.

fices, dreading more the dangers of poverty than of [illegible]

[illegible] of the [illegible] began to find that this was the time for [illegible] their power [illegible], and to compass their ambition under the veil of promoting juſtice. Of this number was Antony, who [illegible] as a [illegible] to [illegible]. He was a [illegible] and [illegible], but killed in war, to which he had been trained from his youth. He was [illegible] and [illegible], with Lepidus, who was [illegible] himſelf, to ſeize this opportunity of aſſuming the ſovereign power. Lepidus, therefore, took poſſeſſion of the forum with a band of ſoldiers at his devotion; and Antony being conſul, was permitted to command them. Their firſt ſtep was to poſſeſs themſelves of all Cæſar's papers and [illegible]; and the next to convene the ſenate, in order to determine whether Cæſar had been a legal magiſtrate or a tyrannical uſurper, and whether thoſe who killed him merited rewards or puniſhments. There were many of theſe who had received their promotions from Cæſar, and had acquired large fortunes in conſequence of his appointments; to vote him an uſurper, therefore, would be to endanger their property; and yet to vote him innocent, might endanger the ſtate. In this dilemma they ſeemed willing to reconcile extremes; wherefore they approved all the acts of Cæſar, and yet granted a general pardon to all the conſpirators.

223 The conſpirators pardoned by the ſenate.

This decree was very far from giving Antony ſatisfaction, as it granted ſecurity to a number of men who were the avowed enemies of tyranny, and who would be foremoſt in oppoſing his ſchemes of reſtoring abſolute power. As therefore the ſenate had ratified all Cæſar's acts without diſtinction, he formed a ſcheme upon this of making him rule when dead as imperiouſly as he had done when living. Being, as was ſaid, poſſeſſed of Cæſar's books of accounts, he ſo far gained upon his ſecretary as to make him inſert whatever he thought proper. By theſe means, great ſums of money, which Cæſar never would have beſtowed, were here diſtributed among the people; and every man who was averſe to republican principles was here ſure of finding a gratuity. He then demanded that Cæſar's funeral obſequies ſhould be performed; which the ſenate now could not decently forbid, as they had never declared him a tyrant. Accordingly, the body was brought forth into the forum with the utmoſt ſolemnity; and Antony began his operations upon the paſſions of the people, by the prevailing motives of private intereſt. He firſt read Cæſar's will, in which he had left Octavius, his ſiſter's grandſon, his heir, permitting him to take the name of *Cæſar*; and three parts of his private fortune Brutus was to inherit in caſe of his death. The Roman people were left the gardens which he had on the other ſide the Tiber; and every citizen, in particular, was to receive 300 ſeſterces. This laſt bequeſt not a little contributed to increaſe the people's affection for their late dictator; they now began to conſider Cæſar as a father, who, not ſatisfied with doing them the greateſt good while living, thought of benefiting them even after his death. As Antony continued reading, the multitude began to be moved, and ſighs and lamentations were heard from every quarter. Antony, ſeeing the audience favourable

224 Antony inflames the people.

The conſpirators to give a colour of juſtice to their [illegible] [illegible] Artemidorus, a Greek philoſopher, who had diſcovered the whole plot, delivered to him a memorial, containing the heads of his information; but Cæſar gave it, with other papers, to one of his ſecretaries without reading, as was uſual in things of this nature. As ſoon as he had taken his place in the ſenate, the conſpirators [illegible] him, under a pretence of ſaluting him; and Cimber, who was one of them, approached in a ſuppliant poſture, pretending to ſue for his brother's pardon, who was baniſhed by his order. All the conſpirators ſeconded him with great tenderneſs; and Cimber, ſeeming to ſue with ſtill greater ſubmiſſion, took hold of the bottom of his robe, holding him ſo as to prevent his riſing. This was the ſignal agreed on. Caſca, who was behind, ſtabbed him, though ſlightly, in the ſhoulder. Cæſar inſtantly turned round, and with the ſtyle of his tablet wounded him in the arm. However, all the conſpirators were now alarmed; and [illegible] him round, he received a ſecond ſtab from an unknown hand in the breaſt, while Caſſius wounded him in the face. He ſtill defended himſelf with great [illegible], ruſhing among them, and throwing down ſuch as oppoſed him, till he ſaw Brutus among the conſpirators, who, coming up, ſtruck his dagger in his thigh. From that moment Cæſar thought no more of defending himſelf, but looking upon this conſpirator, cried out, "And you too, Brutus!" Then covering his head, and ſpreading his robe before him in order to fall with greater decency, he ſunk down at the baſe of Pompey's ſtatue, after receiving three-and-twenty wounds, in the [illegible] year of his age, and 5th of his reign.

As ſoon as the conſpirators had diſpatched Cæſar, they began to addreſs themſelves to the ſenate, in order to vindicate the motives of their enterpriſe, and to excite them to join in procuring their country's free[illegible] but the [illegible] were [illegible] with ſuch precipitation, that the lives of ſome of them [illegible] to the [illegible]. The [illegible] being [illegible] by [illegible] ſhouts, and [illegible] being [illegible]; [illegible] by their fears, and [illegible] to a deſire of plunder. In this [illegible] confuſion, the conſpirators all retired to the Capitol, and [illegible] the [illegible] body of [illegible] Brutus [illegible] to pay. It was in vain they [illegible]. They only [illegible] for freedom, and that they killed a tyrant who [illegible] the [illegible] of the people, and [illegible] to [illegible] and evil, but regarded their [illegible]

Rome. vourable to his deſigns, now began to addreſs the aſſembly in a more pathetic ſtrain: he preſented before them Cæſar's bloody robe, and as he unfolded it, took care they ſhould obſerve the number of ſtabs in it: he then diſplayed an image, which to them appeared the body of Cæſar, all covered with wounds. The people could now no longer contain their indignation; they unanimouſly cried out for revenge; all the old ſoldiers who had fought under him, burnt, with his body, their coronets, and other marks of conqueſt with which he had honoured them. A great number of the firſt matrons in the city threw in their ornaments alſo; till at length, rage ſucceeding to ſorrow, the multitude ran with flaming brands from the pile to ſet fire to the conſpirators' houſes. In this rage of reſentment, meeting with one Cinna, whom they miſtook for another of the ſame name who was in the conſpiracy, they tore him in pieces. The conſpirators themſelves, however, being well guarded, repulſed the multitude with no great trouble; but perceiving the rage of the people, they thought it ſafeſt to retire from the city. Divine honours were then granted him; and an altar was erected on the place where his body was burnt, where afterwards was erected a column inſcribed, *To the Father of his country*.

225 He endeavours to engroſs the power entirely into his own hand.

In the mean time, Antony, who had excited this flame, reſolved to make the beſt of the occaſion. Having gained the people by his zeal in Cæſar's cauſe, he next endeavoured to bring over the ſenate, by a ſeeming concern for the freedom of the ſtate. He therefore propoſed to recal Sextus, Pompey's only remaining ſon, who had concealed himſelf in Spain ſince the death of his father; and to grant him the command of all the fleets of the empire. His next ſtep to their confidence, was the quelling a ſedition of the people, who roſe to revenge the death of Cæſar, and putting their leader Amathus to death, who pretended to be the ſon of Marius. He after this pretended to dread the reſentment of the multitude, and demanded a guard for the ſecurity of his perſon. The ſenate granted his requeſt; and, under this pretext, he drew round him a body of 6000 reſolute men, attached to his intereſt, and ready to execute his commands. Thus he continued every day making rapid ſtrides to abſolute power; all the authority of government was lodged in his hands and thoſe of his two brothers alone, who ſhared among them the conſular, tribunitian, and prætorian power. His vows to revenge Cæſar's death ſeemed either poſtponed, or totally forgotten; and his only aim ſeemed to be to confirm himſelf in that power which he had thus artfully acquired. But an obſtacle to his ambition ſeemed to ariſe from a quarter in which he leaſt expected it. This was from one Octavius, or Octavianus Cæſar, afterwards called *Auguſtus*, who was the grand-nephew, and adopted ſon of Cæſar, and was at Apollonia when his kinſman was ſlain. He was then about 18 years old, and had been ſent to that city to improve himſelf in the ſtudy of Grecian literature. Upon the news of Cæſar's death, notwithſtanding the earneſt diſſuaſions of all his friends, he reſolved to return to Rome, to claim the inheritance, and revenge the death of his uncle. From the former profeſſions of Antony, he expected to find him a warm aſſiſtant to his aims; and he doubted not, by his concurrence, to take ſignal vengeance on all who had a hand in the conſpiracy. However, he was greatly diſappointed. Antony, whoſe projects were all to aggrandize himſelf, gave him but a very cold reception, and, inſtead of granting him the fortune left him by the will, delayed the payment of it upon various pretences, hoping to check his ambition by his limiting his circumſtances. But Octavianus, inſtead of abating his claims, even ſold his own patrimonial eſtate, to pay ſuch legacies as Cæſar had left, and particularly that to the people. By theſe means he gained a degree of popularity, which his enemies vainly laboured to diminiſh, and which in fact he had many other methods to procure. His converſation was elegant and inſinuating, his face comely and graceful, and his affection to the late dictator ſo ſincere, that every perſon was charmed either with his piety or his addreſs. But what added ſtill more to his intereſt was the name of Cæſar, which he had aſſumed, and, in conſequence of which, the former followers of his uncle now flocked in great numbers to him. All theſe he managed with ſuch art, that Antony now began to conceive a violent jealouſy for the talents of his young opponent, and ſecretly laboured to counteract all his deſigns. In fact, he did not want reaſon; for the army near Rome, that had long wiſhed to ſee the conſpirators puniſhed, began to turn from him to his rival, whom they ſaw more ſincerely bent on gratifying their deſires. Antony having procured alſo the government of Hither Gaul from the people, two of his legions that he had brought home from his former government of Macedonia, went over to Octavianus, notwithſtanding all his remonſtrances to detain them. This produced, as uſual, interviews, complaints, recriminations, and pretended reconciliations, which only tended to widen the difference; ſo that, at length, both ſides prepared for war. Thus the ſtate was divided into three diſtinct factions; that of Octavianus, who aimed at procuring Cæſar's inheritance, and revenging his death; that of Antony, whoſe ſole view was to obtain abſolute power; and that of the conſpirators, who endeavoured to reſtore the ſenate to its former authority.

Antony being raiſed by the people to his new government of Ciſalpine Gaul, contrary to the inclinations of the ſenate, reſolved to enter upon his province immediately, and oppoſe Brutus, who commanded a ſmall body of troops there, while his army was yet entire. He accordingly left Rome, and marching thither, commanded Brutus to depart. Brutus, being unable to oppoſe him, retired with his forces; but being purſued by Antony, he was at laſt beſieged in the city of Mutina, of which he ſent word to the ſenate.

226 Is oppoſed by Octavianus.

In the mean while, Octavianus, who by this time had raiſed a body of 10,000 men, returned to Rome: and being reſolved, before he attempted to take vengeance on the conſpirators, if poſſible to diminiſh the power of Antony, began by bringing over the ſenate to ſecond his deſigns. In this he ſucceeded by the credit of Cicero, who had long hated Antony becauſe he thought him the enemy of the ſtate. Accordingly, by means of his eloquence, a decree was paſſed, ordering Antony to raiſe the ſiege of Mutina, to evacuate Ciſalpine Gaul, and to await the further orders of the ſenate upon the banks of the Rubicon. Antony treated the order with contempt; and inſtead of

227 A war breaks out between them.

[illegible] from their expectations. The two consuls were mortally [illegible] death, called [illegible] in with Antony, telling him, that the senate only desired to de[illegible] to each other. The [illegible] his spirits: so that from that time he only sought a pretext to break [illegible] of a party of his army to Decimus Brutus, and their denying him a triumph soon after, served to alienate his mind entirely from the senate, and made him resolve to join Antony and Lepidus. He was willing, however, to try the senate thoroughly, before he came to an open rupture; wherefore he sent to demand the consulship, which was refused him. He then thought himself obliged to keep no measures with that assembly, but privately sent to sound the inclinations of Antony and Lepidus, concerning a junction of forces, and found them as eager to assist as the senate was to oppose him. Antony was, in fact, the general of both armies, and Lepidus was only nominally so, his soldiers refusing to obey him upon the approach of the former. Wherefore, upon being assured of the assistance of Octavianus upon their arrival in Italy, they soon crossed the Alps with an army of 17 legions, breathing revenge against all who had opposed their designs.

The senate now began, too late, to perceive their error in disobliging Octavianus; and therefore gave him the consulship which they had so lately refused, and, to prevent his joining with Antony, flattered him with new honours, giving him a power superior to all law. [illegible] made of his new authority was [illegible] Cassius; after which, he joined his forces with those of Antony and Lepidus.

[illegible] the empire [illegible]

The meeting of these three usurpers of their country's freedom was near Mutina, upon a little island of [illegible] cause of their meeting in this place. Lepidus first en[illegible] the other two to approach. Octavianus began the conference, by thanking Antony for his zeal in putting Decimus Brutus to death; who, being abandoned by his army, was taken as he was designing to escape into [illegible]. Their conference lasted for three days; and the result [illegible] in their hands, under the title of the *triumvirate*, for [illegible]

Rome.

Cassius; Lepidus, Spain; and Octavianus, Africa, and the Mediterranean islands. As for Italy, and the eastern provinces, they were to remain in common, until their general enemy was entirely subdued. But the last article of their union was a dreadful one. It was agreed that all their enemies should be destroyed; of which each presented a list. In these were comprised not only the enemies, but the friends of the triumvirate, since the partisans of the one were often found among the opposers of the others. Thus Lepidus gave up his brother Paulus to the vengeance of his colleague; Antony permitted the proscription of his uncle Lucius; and Octavianus delivered up the great Cicero. The most sacred rights of nature were violated; 300 senators, and above 2000 knights, were included in this terrible proscription; their fortunes were confiscated, and their murderers enriched with the spoil. Rome soon felt the effects of this infernal union, and the horrid cruelities of Marius and Sylla were renewed. As many as could escape the cruelty of the triumvirs, fled thither into Macedonia to Brutus, or found refuge with young Pompey, who was now in Sicily, and covered the Mediterranean with his numerous navy. Their cruelties were not aimed at the men alone; but the softer sex were in danger of being marked as objects either of avarice or resentment. They made out a list of 1400 women of the best quality, and the richest in the city, who were ordered to give in an account of their fortunes, to be taxed in proportion. But this seemed so unpopular a measure, and was so firmly opposed by Hortensia, who spoke against it, that, instead of 1400 women, they were content to tax only 400. However, they made up the deficiency by extending the tax upon men; near 100,000, as well citizens as strangers, were compelled to furnish supplies to the subversion of their country's freedom. At last, both the avarice and vengeance of the triumviri seemed fully satisfied, and they went into the senate to declare that the proscription was at an end: and thus having deluged the city with blood, Octavianus and Antony, leaving Lepidus to defend Rome in their absence, marched with their army to oppose the conspirators, who were now at the head of a formidable army in Asia.

231 They are opposed by Brutus and Cassius.

Brutus and Cassius, the principal of these, upon the death of Cæsar, being compelled to quit Rome, went into Greece where they persuaded the Roman students at Athens to declare in the cause of freedom; then parting, the former raised a powerful army in Macedonia and the adjacent countries, while the latter went into Syria, where he soon became master of 12 legions, and reduced his opponent Dolabella to such straits as to kill himself. Both armies soon after joining at Smyrna, the sight of such a formidable force began to revive the declining spirits of the party, and to re-unite the two generals still more closely, between whom there had been some time before a slight misunderstanding. In short, having quitted Italy like distressed exiles, without having one single soldier or one town that owned their command, they now found themselves at the head of a flourishing army, furnished with all the necessaries for carrying on the war, and in a condition to support a contest where the empire of the world depended on the event. This success in raising levies was entirely owing to the justice, moderation,

Rome. deration, and great humanity of Brutus, who in every inſtance ſeemed ſtudious of the happineſs of his country. Rome.

It was in this flouriſhing ſtate of their affairs that the conſpirators had formed a reſolution of going againſt Cleopatra, who, on her ſide, had made great preparations to aſſiſt their opponents. However, they were diverted from this purpoſe by an information that Octavianus and Antony were now upon their march, with 40 legions to oppoſe them. Brutus now, therefore, moved to have their army paſs over into Greece and Macedonia, and there meet the enemy; but Caſſius ſo far prevailed as to have the Rhodians and Lycians firſt reduced, who had refuſed their uſual contribution. This expedition was immediately put in execution, and extraordinary contributions were raiſed by that means, the Rhodians having ſcarce any thing left but their lives*. The Lycians ſuffered ſtill more ſeverely; for having ſhut themſelves up in the city of Xanthus, they defended the place againſt Brutus with ſuch fury, that neither his art nor intreaties could prevail upon them to ſurrender. At length, the town being ſet on fire, by their attempting to burn the works of the Romans, Brutus, inſtead of laying hold on this opportunity to ſtorm the place, made every effort to preſerve it, intreating his ſoldiers to try all means of extinguiſhing the fire: but the deſperate phrenzy of the citizens was not to be mollified. Far from thinking themſelves obliged to their generous enemy for the efforts which were made to ſave them, they reſolved to periſh in the flames. Wherefore, inſtead of extinguiſhing, they did all in their power to augment the fire, by throwing in wood, dry reeds, and all kinds of fuel. Nothing could exceed the diſtreſs of Brutus upon ſeeing the townſmen thus reſolutely bent on deſtroying themſelves: he rode about the fortifications, ſtretching out his hands to the Xanthians, and conjuring them to have pity on themſelves and their city; but, inſenſible to his expoſtulations, they ruſhed into the flames with deſperate obſtinacy, and the whole ſoon became an heap of undiſtinguiſhable ruin. At this horrid ſpectacle, Brutus offered a reward to every ſoldier who would bring him a Lycian alive. The number of thoſe whom it was poſſible to ſave from their own fury amounted to no more than 150.

* See Rhodes.

Brutus and Caſſius met once more at Sardis, where, after the uſual ceremonies were paſſed between them, they reſolved to have a private conference together, when, after much altercation, they were at laſt perfectly reconciled. After which, night coming on, Caſſius invited Brutus and his friends to an entertainment. Upon retiring home, it was that Brutus, as Plutarch tells the ſtory, ſaw a ſpectre in his tent. It was in the dead of the night, when the whole camp was perfectly quiet, that Brutus was employed in reading by a lamp that was juſt expiring. On a ſudden he thought he heard a noiſe as if ſomebody entered; and looking towards the door, he perceived it open. A gigantic figure, with a frightful aſpect, ſtood before him, and continued to gaze upon him with ſilent ſeverity. At laſt Brutus had courage to ſpeak to it: "Art thou a demon or a mortal man? and why comeſt thou to me?" "Brutus," replied the phantom, "I am thy evil genius, thou ſhalt ſee me again at Philippi." "Well then," anſwered Brutus, without being diſcompoſed, "we ſhall meet again." Upon which the phantom vaniſhed; and Brutus calling to his ſervants, aſked if they had ſeen any thing; to which replying in the negative, he again reſumed his ſtudies. But as he was ſtruck with ſo ſtrange an occurrence, he mentioned it the next day to Caſſius, who, being an Epicurean, aſcribed it to the effect of imagination too much exerciſed by vigilance and anxiety. Brutus appeared ſatisfied with this ſolution of his late terrors; and, as Antony and Octavianus were now advanced into Macedonia, they ſoon after paſſed over into Thrace, and advanced to the city of Philippi, near which the forces of the triumvirs were poſted. 232 Brutus ſees a ſpectre.

A battle ſoon enſued; in which the republicans were defeated, and Caſſius killed, as is related in the article Philippi.

The firſt care of Brutus, when he became the ſole general, was to aſſemble the diſperſed troops of Caſſius, and animate them with freſh hopes of victory. As they had loſt all they poſſeſſed by the plundering of their camp, he promiſed them 2000 denarii each man to make up their loſſes. This once more inſpired them with new ardour; they admired the liberality of their general, and with loud ſhouts proclaimed his former intrepidity. Still, however, he had not confidence ſufficient to face the adverſary, who offered him battle the enſuing day. His aim was to ſtarve his enemies, who were in extreme want of proviſions, their fleet having been lately defeated. But his ſingle opinion was over-ruled by the reſt of his army, who now grew every day more confident of their ſtrength, and more arrogant to their new general. He was, therefore, at laſt, after a reſpite of 20 days, obliged to comply with their ſolicitations to try the fate of the battle. Both armies being drawn out, they remained a long while oppoſite to each other without offering to engage. It is ſaid that he himſelf had loſt much of his natural ardour by having again ſeen the ſpectre the night preceding: however, he encouraged his men as much as poſſible, and gave the ſignal for battle within three hours of ſun-ſet. Fortune again declared againſt him; and the two triumviri expreſsly ordered by no means to ſuffer the general to eſcape, for fear he ſhould renew the war. Thus the whole body of the enemy ſeemed chiefly intent on Brutus alone, and his capture ſeemed inevitable. In this deplorable exigence, Lucilius his friend reſolved, by his own death, to effect the general's delivery. Upon perceiving a body of Thracian horſe cloſely purſuing Brutus, and juſt upon the point of taking him, he boldly threw himſelf in their way, telling them that he was Brutus. The Thracians, overjoyed with ſo great a prize, immediately diſpatched ſome of their companions, with the news of their ſucceſs, to the army. Upon which, the ardour of the purſuit now abating, Antony marched out to meet his priſoner; ſome meanly deploring the fate of ſo virtuous a man: others reproaching that mean deſire of life for which he conſented to undergo captivity. Antony now being on Thracian approach, began to prepare himſelf for the interview; but the faithful Lucilius, advancing with a cheerful air, owned the deceit that he had put upon him: on which the triumvir, ſtruck with ſo much fidelity, pardoned him upon the ſpot; and from that time forward loaded him with benefits, and honoured him with his friendſhip. 233 The republicans defeated. 234 They are defeated a ſecond time.

In.

Rome.

In the mean time Brutus, with a ſmall number of friends, paſſed over a river, and, [illegible] but [illegible] which [illegible] the [illegible] of the enemy. After taking breath a little time, he [illegible] to give him [illegible] of thoſe that remained; but he never returned, being killed by a party of the enemy's horſe. Brutus having very nobly [illegible], now reſolved to die like a man, and applied to thoſe who had attended him, to lend him their laſt aſſiſtance. None of them however, would render him ſo melancholy a piece of ſervice. At laſt one Strato, averting his head, preſented the ſword's point to Brutus; who threw himſelf upon it, and immediately expired.

238 Brutus kills himſelf.

From the moment of Brutus's death the triumviri began to act as ſovereigns, and to divide the Roman dominions between them, as theirs by right of conqueſt. However though there were apparently three who thus participated all the power, yet, in fact, only two were actually poſſeſſed of it; ſince Lepidus was at firſt admitted merely to curb the mutual jealouſy of Antony and Octavianus, and was poſſeſſed neither of intereſt in the army nor authority among the people. Their firſt care was to puniſh thoſe whom they had formerly marked for vengeance. The head of Brutus was ſent to Rome to be thrown at the foot of Cæſar's ſtatue. His aſhes, however, were ſent to his wife Porcia, Cato's daughter, who afterwards killed herſelf by ſwallowing burning coals. It is obſerved, that of all thoſe who had a hand in the death of Cæſar, not one died a natural death.

236 Antony's extravagance.

The power of the triumviri being thus eſtabliſhed upon the ruins of the commonwealth, Antony went into Greece, and ſpent ſome time at Athens, converſing among the philoſophers, and aſſiſting at their diſputes in perſon. From thence he paſſed over into Aſia, where all the monarchs of the eaſt, who acknowledged the Roman power, came to pay him their obedience. In this manner he proceeded from kingdom to kingdom, attended by a crowd of ſovereigns, exacting contributions, diſtributing favours, and giving away crowns with capricious inſolence. He preſented the kingdom of Cappadocia to Syſenes, in prejudice of Ariarathes, only becauſe he found pleaſure in the beauty of Glaphyra, the mother of the former. He ſettled Herod in the kingdom of Judea, and ſupported him againſt every oppoſer. But among all the love-ſights of the eaſt who ſhared his favours, none had ſo large a part as Cleopatra, the celebrated queen of Egypt.

It happened that Serapion, her governor in the iſland of Cyprus, had formerly rendered ſome ſervice to the triumvir; and it was thought proper that the firſt viſit ſhould be made on that occaſion. Accordingly, having received inſtructions from Cleopatra to come and clear herſelf of this imputation of infidelity, ſhe readily complied, equally conſcious of the goodneſs of her cauſe and the power of her beauty. She had already ſubdued the [illegible] upon Cæſar and Pompey, and [illegible] a few years [illegible] Antony was now in Tarſus, a city of Cilicia, when [illegible] ſent [illegible] ſhe [illegible] upon the river Cydnus, at the mouth of which the city ſtood, with the moſt ſumptuous preparations. The ſhip in which ſhe came up the river was of purple, large and ſhining in the wind. The oars of ſilver kept time to the ſound of flutes and cymbals. She herſelf lay reclined on a couch ſpangled with ſtars of gold, and with ſuch ornaments as poets and painters had uſually aſcribed to Venus. On each ſide were boys like Cupids, who fanned her by turns; while the moſt beautiful nymphs, dreſſed like Nereids and Graces, were placed at proper diſtances around her. Upon the banks of the river were kept burning the moſt exquiſite perfumes, while an infinite number of people gazed upon the ſight. Antony was captivated with her beauty; and, leaving all his buſineſs to ſatisfy his paſſion, ſhortly after followed her into Egypt.

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While he thus remained idle, Octavianus, who took upon him to lead back the veteran troops and ſettle them in Italy, was aſſiduouſly employed in providing for their ſubſiſtence. He had promiſed them lands at home, as a recompenſe for their paſt ſervices; but they could not receive new grants, without turning out the former inhabitants. In conſequence of this, multitudes of women, with children in their arms, whoſe tender years and innocence excited univerſal compaſſion, daily filled the temples and the ſtreets with their diſtreſſes. Numbers of huſbandmen and ſhepherds came to deprecate the conqueror's intention, or to obtain an habitation in ſome other part of the world. Amongſt this number was Virgil the poet, who in an humble manner begged permiſſion to retain his patrimonial farm: Virgil obtained his requeſt; but the reſt of his countrymen, of Mantua and Cremona, were turned out without mercy.

238 Miſeries ſuſtained by the Romans.

Italy and Rome now felt the moſt extreme miſeries; the inſolent ſoldiers plundered at will; while Sextus Pompey, being maſter of the ſea, cut off all foreign communication, and prevented the people's receiving their uſual ſupplies of corn. To their miſchiefs were added the commencement of another civil war. Fulvia, the wife of Antony, who had been left behind him at Rome, had felt for ſome time all the rage of jealouſy, and reſolved to try every method of bringing back her huſband from the arms of Cleopatra. She conſidered a breach with Octavianus as the only probable means of rouſing him from his lethargy; and accordingly, with the aſſiſtance of Lucius her brother-in-law, who was then conſul, and entirely devoted to her intereſt, ſhe began to ſow the ſeeds of diſſenſion. The pretext was, that Antony ſhould have a ſhare in the diſtribution of lands as well as Octavianus. This produced ſome negociations between them; Octavianus offered to make the veterans themſelves umpires in the diſpute. Lucius refuſed to acquieſce; and being at the head of more than ſix legions, moſtly compoſed of ſuch as had been diſpoſſeſſed of their lands, he reſolved to compel Octavianus to accept of what war terms he ſhould offer. Thus a new war was excited between Octavianus and Antony; or, at leaſt, the generals of the latter aſſumed the [illegible] of his name. Octavianus, however proved victorious: Lucius was hemmed in between two armies, and compelled to retreat to Peruſia, a city of Etruria, where he was cloſely beſieged by the oppoſite party. He made many deſperate ſallies, and Fulvia did all in her power to relieve him, but without ſucceſs. The ſiege at laſt, therefore, [illegible] by famine that he could no longer reſiſt, and delivered himſelf up to the mercy of the conqueror. Octavianus received him very humanely, and generouſly pardoned him and all his followers. The Peruſian conclud-

237 The triumviri begin to act as ſovereigns.

Rome. cluded the war in a few months, he returned in triumph to Rome. Rome

Antony, who during this interval, was revelling in all the ſtudied luxuries procured him by his inglorious miſtreſs, having heard of his brother's overthrow, and his wife's being compelled to leave Italy, was reſolved to oppoſe Octavianus without delay. He accordingly ſailed at the head of a conſiderable fleet from Alexandria to Tyre, from thence to Cyprus and Rhodes, and had an interview with Fulvia his wife at Athens. He much blamed her for occaſioning the late diſorders, teſtified the utmoſt contempt for her perſon, and, leaving her upon her death-bed at Sycion, haſtened into Italy to fight Octavianus. They both met at Brunduſium; and it was now thought that the flames of a civil war were going to blaze out once more. The forces of Antony were numerous, but moſtly newly raiſed; however, he was aſſiſted by Sextus Pompeius, who in theſe oppoſitions of intereſts was daily coming into power. Octavianus was at the head of thoſe veterans who had always been irreſiſtible, but who ſeemed no way diſpoſed to fight againſt Antony their former general. A negociation was therefore propoſed; and a reconciliation was effected. All offences and affronts were mutually forgiven; and to cement the union, a marriage was concluded between Antony and

239 The empire divided anew. Octavia, the ſiſter of Octavianus. A new diviſion of the Roman empire was made between them; Octavianus was to have the command of the weſt, Antony of the eaſt, while Lepidus was obliged to content himſelf with the provinces in Africa. As for Sextus Pompeius, he was permitted to retain all the iſlands he had already poſſeſſed, together with Peloponneſus; he was alſo granted the privilege of demanding the conſulſhip in his abſence, and of diſcharging that office by any of his friends. It was likewiſe ſtipulated to leave the ſea open, and pay the people what corn was due out of Sicily. Thus a general peace was concluded, to the great ſatisfaction of the people, who now expected a ceſſation from all their calamities.

This calm ſeemed to continue for ſome time: Antony led his forces againſt the Parthians, over whom his lieutenant, Ventidius, had gained great advantages. Octavianus drew the greateſt part of his army into Gaul, where there were ſome diſturbances; and Pompey went to ſecure his newly ceded province to his intereſt. It was on this quarter that freſh motives were given for renewing the war. Antony, who was obliged by treaty to quit Peloponneſus, refuſed to evacuate it till Pompey had ſatisfied him for ſuch debts as were due to him from the inhabitants. This Pompey would by no means comply with; but immediately fitted out a new fleet, and renewed his former enterpriſes, by cutting off ſuch corn and proviſions as were deſigned to Italy. Thus the grievances of the poor were again renewed; and the people began to complain, that inſtead of three tyrants they were now oppreſſed by four.

In this exigence, Octavianus, who had long meditated the beſt means of diminiſhing the number, reſolved to begin by getting rid of Pompey, who kept the ſtate in continued alarms. He was maſter of two fleets; one of which he had cauſed to be built at Ravenna; and another which Menodorus, who revolted from Pompey, brought to his aid. His firſt attempt was to invade Sicily; but being overpowered in his paſſage by Pompey, and afterwards ſhattered in a ſtorm, he was obliged to defer his deſigns to the enſuing year. During this interval he was reinforced by a fleet of 120 ſhips, given him by Antony, with which he reſolved once more to invade Sicily on three ſeveral quarters. But fortune ſeemed ſtill determined to oppoſe him. He was a ſecond time diſabled and ſhattered by a ſtorm: which ſo raiſed the vanity of Pompey, that he began to ſtyle himſelf the *ſon of Neptune*. However, Octavianus was not to be intimidated by any diſgraces; for having ſhortly refitted his navy, and recruited his forces, he gave the command of both to Agrippa, his faithful friend and aſſociate in war. Agrippa proved himſelf worthy of the truſt repoſed in him: he began his operations by a victory over Pompey; and, though he was ſhortly after worſted himſelf, he ſoon after gave his adverſary a complete and final overthrow. Thus undone, Pompey reſolved to fly to Antony, from whom he expected refuge, as he had formerly obliged that triumvir by giving protection to his mother. However, he tried once more, at the head of a ſmall body of men, to make himſelf independent, and even ſurpriſed Antony's officers who had been ſent to accept of his ſubmiſſions. Nevertheleſs, he was at laſt abandoned by his ſoldiers, and delivered up to Titus, Antony's lieutenant, who ſhortly after cauſed him to be ſlain.

240 Sextus Pompeius defeated and taken priſoner.

The death of this general removed one very powerful obſtacle to the ambition of Octavianus, and he reſolved to take the earlieſt opportunity to get rid of the reſt of his aſſociates. An offence was ſoon furniſhed by Lepidus, that ſerved as a ſufficient pretext for depriving him of his ſhare in the triumvirate. Being now at the head of 22 legions, with a ſtrong body of cavalry, he idly ſuppoſed that his preſent power was more than an equivalent to the popularity of Octavianus. He therefore reſolved upon adding Sicily, where he then was, to his province; pretending a right, as having firſt invaded it. His colleague ſent to expoſtulate upon theſe proceedings; but Lepidus fiercely replied, 'that he was determined to have his ſhare in the adminiſtration, and would no longer ſubmit to let one alone poſſeſs all the authority.' Octavianus was previouſly informed of the diſpoſition of Lepidus's ſoldiers; for he had, by his ſecret intrigues and largeſſes, entirely attached them to himſelf. Wherefore, without further delay, he with great boldneſs went alone to the camp of Lepidus, and with no other aſſiſtance than his private bounties, and the authority he had gained by his former victories, he reſolved to depoſe his rival. The ſoldiers thronged round him with the moſt dutiful alacrity, while Lepidus haſtened to prevent their defection. But Octavianus, though he received a wound from one of the centurions, went with great preſence of mind to the place where the military enſigns were planted, and, ſnatching one of them in the air, all the legionary ſoldiers ran in crowds and ſaluted him as their general. Lepidus being thus abandoned by his men, diveſted himſelf of all the marks of his authority, which he could no longer keep, and ſubmiſſively threw himſelf at the feet of Octavianus. This general ſpared his life, notwithſtanding the remonſtrances of his army; but deprived him of all his former authority, and baniſhed him to Circæum.

241 Lepidus defeated and baniſhed.

Octavianus was received upon his return to Rome with univerſal joy; the ſenators met him at the gates, and

Rome.

243 Antony's infatuation.

244 Prodigies.

and conducted him to the Capitol, the people following, crowned with garlands of flowers; and after having returned thanks to the gods, invited him to supper. There remained now but one obſtacle to their happineſs, which was Antony, whom he invited to return, and for that purpoſe began to repair the ſhattered affairs of his party in Italy. In fact, Antony's conduct did not a little contribute to promote the deſigns of his enemies. He had married Octavia, and was preparing to return to Italy, when he received the news of Octavia's having left Rome, and of Cæſar's preparations for war. Inſtead of returning to Italy, he ſteered his courſe to Athens, where he paſſed the winter in the midſt of feaſts and entertainments, and ſeemed entirely to have forgotten the buſineſs of the empire. He was ſtill more confirmed in his reſolution of purſuing his pleaſures, when he received the news of Octavia's having left Rome, and of Cæſar's preparations for war. Inſtead of returning to Italy, he ſteered his courſe to Athens, where he paſſed the winter in the midſt of feaſts and entertainments, and ſeemed entirely to have forgotten the buſineſs of the empire. He was ſtill more confirmed in his reſolution of purſuing his pleaſures, when he received the news of Octavia's having left Rome, and of Cæſar's preparations for war.

Antony was now in the city of Leucopolis, revelling with his inſidious paramour, when he heard that Octavia was at Athens, upon her journey to viſit him. This was very unwelcome news to him as well as to Cleopatra; who, fearing the charms of her rival, endeavoured to convince Antony of the ſtrength of her paſſion. He frequently caught her in tears, which ſhe ſeemed as if willing to hide; and often intreated her to tell him the cauſe, which ſhe ſeemed willing to ſuppreſs. Theſe artifices, together with the ceaſeleſs flattery and importunity of her creatures, prevailed ſo much upon Antony's weakneſs, that he commanded Octavia to return home to Rome, and at the ſame time ſhewed himſelf more ready to comply to Cleopatra than before. His ridiculous paſſion ſeemed to have no bounds. He reſolved to own her for his wife, and entirely to repudiate Octavia. He accordingly aſſembled the people of Alexandria in the public theatre, where, ſeated on a throne of ſilver, under which were placed two thrones of gold, one for himſelf and the other for Cleopatra, he declared himſelf, dreſſed like Bacchus, while Cleopatra ſat beſide him clothed in the ornaments and attributes of Iſis, the principal deity of the Egyptians. He then declared her queen of all the countries which he had conquered upon her; which conſiſted of Egypt, Cyprus, Libya, Cœle-Syria, and a part of Syria. To the two children which he had by her he gave the titles of kings of kings, with very extenſive dominions; and, to crown his abſurdities, he ſent a minute account of his proceedings to the two conſuls at Rome. It was now neceſſary to act up to his imaginary dignity: new ornaments and pageantries were therefore invented, and new marks of proſtration found out: not leſs than [illegible] Sterling were laviſhed upon one night's entertainment; it is ſaid, upon this occaſion, that Cleopatra diſſolved a pearl of great value in vinegar, and drank it off. But we are told of one circumſtance that might well repreſs their delights, and teach mankind to reſt the leaſt confidence in future proſperity, however great. He was ſuſpicious of being poiſoned in every meal; he feared Cleopatra, whom he ſo much loved, and would eat nothing without having it previouſly taſted by one of his attendants.

Rome.

244 Octavianus reſolves to make war upon him.

In the mean time Octavianus had now a ſufficient pretext for declaring war: and informed the ſenate of his intentions. However, he deferred the execution of his deſigns for a while, being then employed in quelling an inſurrection of the Illyrians. The following year was chiefly taken up in preparations againſt Antony, who, perceiving his deſigns, remonſtrated to the ſenate, that he had many cauſes of complaint againſt his colleague, who had ſeized upon Sicily without offering him a ſhare; alleging that he had alſo diſpoſſeſſed Lepidus, and kept to himſelf the province he had commanded; and that he had divided all Italy among his own ſoldiers, leaving nothing to recompenſe thoſe in Aſia. To this complaint Octavianus was contented to make a ſarcaſtic anſwer; implying, that it was abſurd to complain of his diſtribution of a few trifling diſtricts in Italy, when Antony having conquered Parthia, he might now reward his ſoldiers with cities and provinces. The ſarcaſm upon Antony's misfortunes in Parthia ſo provoked him, that he ordered Canidius, who commanded his army, to march without intermiſſion into Europe; while he and Cleopatra followed to Samos, in order to prepare for carrying on the war with vigour. When arrived there, it was ridiculous enough to behold the odd mixture of preparations for pleaſure and for war. On one ſide all the kings and princes from Europe to the Euxine ſea had orders to ſend him thither ſupplies both of men, proviſions, and arms; on the other ſide, all the comedians, dancers, buffoons, and muſicians of Greece, were ordered to attend him. Thus, frequently, when a ſhip was thought to arrive laden with ſoldiers, arms, and ammunition, it was found only filled with players and theatrical machinery. When news was brought of the approach of an army, muſſel-pots only arrived with tidings of a freſh quantity of veniſon. The kings who attended him endeavoured to gain his favour more by their entertainments than their warlike preparations; the provinces ſtrove rather to pleaſe him by flattering to his deſires, than by their alacrity in his ſervice; ſo that it was heard to ſay, "What reaſonings would not this man make for a victory, when he thus triumphs at the eve of a dangerous war!" In ſhort, his beſt friends now began to forſake his intereſts.

243 Divorces, &c. Cleopatra.

Rome. to put himſelf in a condition for carrying on the war, and ſhortly after declared it againſt him in form. All Antony's followers were invited over to join him, with great promiſes of rewards: but they were not declared enemies, partly to prevent their growing deſperate, and partly to give a ſhow of moderation to his own party. At length both found themſelves in readineſs to begin the war, and their armies were anſwerable to the empire they contended for. The one was followed by all the forces of the eaſt; the other drew all the ſtrength of the weſt to ſupport his pretenſions. Antony's force compoſed a body of 100,000 foot and 12,000 horſe; while his fleet amounted to 500 ſhips of war. The army of Octavianus muſtered but 80,000 foot, but equalled his adverſary's in his number of cavalry: his fleet was but half as numerous as Antony's; however, his ſhips were better built, and manned with better ſoldiers.

245 Antony defeated at Actium.

The great deciſive engagement, which was a naval one, was fought near Actium, a city of Epirus, at the entrance of the gulph of Ambracia. Antony ranged his ſhips before the mouth of the gulph; and Octavianus drew up his fleet in oppoſition. Neither general aſſumed any fixed ſtation to command in; but went about from ſhip to ſhip wherever his preſence was neceſſary. In the mean time, the two land armies, on oppoſite ſides of the gulph, were drawn up, only as ſpectators of the engagement; and encouraged the fleets by their ſhouts to engage. The battle began on both ſides with great ardour, and after a manner not practiſed upon former occaſions. The prows of their veſſels were armed with brazen points; and with theſe they drove furiouſly againſt each other. In this conflict the ſhips of Antony came with greater force, but thoſe of Octavianus avoided the ſhock with greater dexterity. On Antony's ſide, the ſterns of the ſhips were raiſed in form of a tower; from whence they threw arrows from machines for that purpoſe. Thoſe of Octavianus made uſe of long poles hooked with iron, and fire-pots. They fought in this manner for ſome time with equal animoſity; nor was there any advantage on either ſide, except a ſmall appearance of diſorder in the centre of Antony's fleet. But all of a ſudden Cleopatra determined the fortune of the day. She was ſeen flying from the engagement attended by 60 ſail; ſtruck, perhaps, with the terrors natural to her ſex: but what increaſed the general amazement was, to behold Antony himſelf following ſoon after, and leaving his fleet at the mercy of the conquerors. The engagement, notwithſtanding, continued with great obſtinacy till five in the evening; when Antony's forces, partly conſtrained by the conduct of Agrippa, and partly perſuaded by the promiſes of Octavianus, ſubmitted to the conqueror. The land-forces ſoon after followed the example of the navy; and all yielded to the conqueror without ſtriking a blow the fourth day after the battle.

When Cleopatra fled, Antony purſued her in a five-oared galley; and coming along-ſide of her ſhip entered, without ſeeing or being ſeen by her. She was in the ſtern, and he went to the prow, where he remained for ſome time ſilent, holding his head between his hands. In this manner he continued three whole days; during which, either through indignation or ſhame, he neither ſaw nor ſpoke to Cleopatra. At laſt, when they were arrived at the promontory of Tenarus, the queen's female attendants reconciled them, and every thing went on as before. Still, however, he had the conſolation to ſuppoſe his army continued faithful to him; and accordingly diſpatched orders to his lieutenant Canidius to conduct it into Aſia. However, he was ſoon undeceived when he arrived in Africa, where he was informed of their ſubmiſſion to his rival. This account ſo tranſported him with rage, that he was hardly prevented from killing himſelf; but at length, at the entreaty of his friends, he returned to Alexandria, in a very different ſituation from that in which he had left it ſome time before. Cleopatra, however, ſeemed to retain that fortitude in her misfortunes which had utterly abandoned her admirer. Having amaſſed conſiderable riches by means of confiſcation and other acts of violence, ſhe formed a very ſingular and unheard of project; this was to convey her whole fleet over the iſthmus of Suez into the Red Sea, and thereby ſave herſelf in another region beyond the reach of Rome, with all her treaſures. Some of her veſſels were actually tranſported thither, purſuant to her orders; but the Arabians having burnt them, and Antony diſſuading her from the deſign, ſhe abandoned it for the more improbable ſcheme of defending Egypt againſt the conqueror.— She omitted nothing in her power to put his advice in practice, and made all kinds of preparations for war; at leaſt hoping thereby to obtain better terms from Octavianus. In fact, ſhe had always loved Antony's fortunes rather than his perſon; and if ſhe could have fallen upon any method of ſaving herſelf, though even at his expence, there is no doubt but ſhe would have embraced it with gladneſs. She even ſtill had ſome hopes from the power of her charms, though ſhe was arrived almoſt at the age of 40; and was deſirous of trying upon Octavianus thoſe arts which had been ſo ſucceſsful with the greateſt men of Rome. Thus in three embaſſies, which were ſent one after another from Antony to his rival in Aſia, the queen had always her ſecret agents, charged with particular propoſals in her name. Antony deſired no more than that his life might be ſpared, and to have the liberty of paſſing the remainder of his days in obſcurity. To theſe propoſals Octavianus made no reply. Cleopatra ſent him alſo public propoſals in favour of her children; but at the ſame time privately reſigned him her crown, with all the enſigns of royalty. To the queen's public propoſal no anſwer was given; to her private offer he replied, by giving her aſſurances of his favour in caſe ſhe ſent away Antony or put him to death. Theſe negociations were not ſo private but they came to the knowledge of Antony, whoſe jealouſy and rage were now heightened by every concurrence. He built a ſmall ſolitary houſe upon a mole in the ſea; and there he paſſed his time, ſhunning all commerce with mankind, and profeſſing to imitate Timon the man-hater. However, his furious jealouſly drove him even from this retreat into ſociety; for hearing that Cleopatra had many ſecret conferences with one Thyrſus, an emiſſary from Octavianus, he ſeized upon him, and having ordered him to be cruelly ſcourged, he ſent him back to his patron. At the ſame time he ſent letters by him, importing, that he had chaſtiſed Thyrſus for inſulting a man in his misfortunes; but withal he gave his rival permiſſion to avenge himſelf, by ſcourging Hipparchus, Antony's freedman, in the ſame manner. The revenge, in this caſe, would have

Rome.

249 He reſolves to defend Egypt againſt the conqueror.

been highly pleasing to Antony, as Hyparchus had put him to pain the fortunes of his more successful rival.

Meanwhile, the operations of the war were carried vigorously forward, and Egypt was once more the theatre of the contending armies of Rome. Gallus, the lieutenant of Octavianus, took Paratonium, which opened the whole country to his incursions. On the other side, Antony, who had still considerable forces by sea and land, wanted to take that important place from the enemy. He therefore marched towards it, flattering himself, that as soon as he should show himself to the legions which he had once commanded, their affection for their ancient general would revive. He approached, therefore, and exhorted them to remember their former vows of fidelity. Gallus, however, ordered all the trumpets to sound, in order to hinder Antony from being heard, so that he was obliged to retire.

247 Pelusium given up to Octavianus.

Octavianus himself was in the mean time advancing with another army before Pelusium, which, by its strong situation, might have retarded his progress for some time. But the governor of the city, either wanting courage to defend it, or previously instructed by Cleopatra to give it up, permitted him to take possession of the place; so that Octavianus had now no obstacle in his way to Alexandria, whither he marched with all expedition. Antony, upon his arrival, sallied out to oppose him, fighting with great desperation, and putting the enemy's cavalry to flight. This slight advantage once more revived his declining hopes; and, being naturally vain, he re-entered Alexandria in triumph. Then going, all armed as he was, to the palace, he embraced Cleopatra, and presented her a soldier who had distinguished himself in the late engagement. The queen rewarded him very magnificently; presenting him with an head-piece and breast-plate of gold. With these, however, the soldier went off the next night to the other army. Antony could not bear this defection without fresh indignation; he resolved, therefore, to make a bold expiring effort by sea and land, but previously offered to fight his adversary in single combat. Octavianus too well knew the inequality of their situations to comply with this forlorn offer; he only, therefore, coolly replied, that Antony had ways enough to die besides single combat.

248 Antony deserted by his fleet.

The evening before the day appointed for the last desperate attempt, he ordered a grand entertainment to be prepared. At day-break he posted the few troops he had remaining upon a rising ground near the city: from whence he sent orders to his galleys to engage the enemy. There he waited to be a spectator of the combat; and, at first, he had the satisfaction to see them advance in good order; but his approbation was soon turned into rage, when he saw his ships only saluting those of Octavianus, and both fleets uniting together, and sailing back into the harbour. At the very same time his cavalry deserted him. He tried, however, to lead on his infantry; which were easily vanquished, and he himself compelled to return into the town. His anger was now ungovernable; he could not help crying out aloud as he passed, that he was betrayed by Cleopatra, and delivered by her to those who, for her sake alone, were his enemies. In these suspicions he was not deceived; or it was by secret orders from the queen that the fleet had passed over to the enemy.

Cleopatra had, for a long while, dreaded the effects of Antony's jealousy; and had, some time before, prepared a method of obviating any sudden sallies it might produce. Near the temple of Isis she had erected a building, which was seemingly designed for a sepulchre. Hither she removed all her treasure and most valuable effects, covering them over with torches, faggots, and other combustible matter. This sepulchre she designed to answer a double purpose; as well to screen her from the sudden resentments of Antony, as to make Octavianus believe that she would burn all her treasures in case he refused her proper terms of capitulation. Here, therefore, she retired from Antony's present fury; shutting the gates, which were fortified with bolts and bars of iron: but in the mean time gave orders that a report should be spread of her death.—This news, which soon reached Antony, recalled all his former love and tenderness. He now lamented her death with the same violence he had but a few minutes before seemed to desire it; and called one of his freedmen, named *Eros*, whom he had engaged by oath to kill him whenever fortune should drive him to this last resource. Eros being now commanded to perform his promise, this faithful follower drew the sword, as if going to execute his orders; but turning his face, plunged it into his own bosom, and died at his master's feet. Antony for a while hung over his faithful servant, and, commending his fidelity, took up the sword, with which stabbing himself in the belly, he fell backward upon a little couch. Though the wound was mortal, yet the blood stopping he recovered his spirits, and earnestly conjured those who were come into the room to put an end to his life; but they all fled, being seized with fright and horror. He therefore continued in agonies for some time; till he was informed by one of the queen's secretaries that his mistress was still alive. He then earnestly desired to be carried to the place where she was. They accordingly brought him to the gate of the sepulchre; but Cleopatra, who would not permit it to be opened, appeared at the window, and threw down cords in order to pull him up. In this manner, assisted by her two female attendants, she raised him all bloody from the ground; and while yet suspended in the air, he continued stretching out his hands to encourage her. Cleopatra and her maids had only just strength sufficient to raise him; and at last, with much straining, they effected their purpose, and carried him to a couch, on which they gently laid him. Here she gave way to her sorrow, tearing her clothes, beating her breast, and kissing the wound of which he was dying. She called upon him as her lord, her husband, her emperor, and seemed to have forgot her own distresses in the greatness of his sufferings. Antony intreated her to moderate the transports of her grief, and asked for some wine. After he had drank, he intreated Cleopatra to endeavour to preserve her life, if she could do it with honour; and recommended Proculus, a friend of Octavianus, as one she might rely on to be her intercessor. Just as he had done speaking, he expired; and Proculus made his appearance by command of Octavianus, who had been informed of Antony's desperate conduct. He was sent to try all means of getting Cleopatra into his power; his master having a double motive for his solicitude on this occasion; one, to prevent her destroying the treasures she had taken with her into the tomb; the other, to

249 Stabs himself with his sword.

250 He dies.

Rome. to preſerve her perſon as an ornament to grace his triumph. Cleopatra, however, was upon her guard, and would not confer with Proculus, except through the gate, which was well ſecured. In the mean time, while he deſignedly drew out the conference to ſome length, and had given Gallus, one of his fellow-ſoldiers, directions to carry on the converſation in his abſence, he entered
251 with two more by the window at which Antony had been
Cleopatra drawn up. As ſoon as he was entered, he ran down
taken. to the gate; and one of the women crying out, that they were taken alive, Cleopatra, perceiving what had happened, drew a poniard, and attempted to ſtab herſelf: but Proculus prevented the blow, and gently remonſtrated that ſhe was cruel in refuſing ſo good a prince as his maſter was, the pleaſure of diſplaying his clemency. He then forced the poniard out of her hand, and examined her cloathes to be certain ſhe had no poiſon about her. Thus leaving every thing ſecured, he went to acquaint his maſter with his proceedings.

Octavianus was extremely pleaſed at finding her in his power: he ſent Epaphroditus to bring her to his palace, and to watch her with the utmoſt circumſpection. He was likewiſe ordered to uſe her, in every reſpect, with that deference and ſubmiſſion which were due to her rank, and to do every thing in his power to render her captivity agreeable. She was permitted to have the honour of granting Antony the rights of burial, and furniſhed with every thing ſhe deſired, that was becoming his dignity to receive, or her love to offer. Yet ſtill ſhe languiſhed under her new confinement. Her exceſſive ſorrow, her many loſſes, and the blows ſhe had given her boſom, produced a fever which ſhe ſeemed willing to increaſe. She reſolved to abſtain from taking any nouriſhment, under the pretence of a regimen neceſſary for her diſorder; but Octavianus being made acquainted with the real motive by her phyſician, began to threaten her with regard to her children, in caſe ſhe perſiſted. This was the only puniſhment that could now affect her; ſhe allowed herſelf to be treated as they thought proper, and received whatever was preſcribed to her recovery.

In the mean time Octavianus made his entry into Alexandria; taking care to mitigate the fears of the inhabitants, by converſing familiarly as he went along with Areus, a philoſopher, and a native of the place. The citizens, however, trembled at his approach; and when he placed himſelf upon the tribunal, they proſtrated themſelves, with their faces to the ground, before him, like criminals who waited the ſentence of their execution. Octavianus preſently ordered them to riſe; telling them, that three motives induced him to pardon them: His reſpect for Alexander, who was the founder of their city; his admiration of its beauty; and his friendſhip for Areus, their fellow-citizen. Two only of particular note were put to death upon this occaſion; Antony's eldeſt ſon Antyllus, and Cæſario, the ſon of Julius Cæſar: both betrayed into his hands by their reſpective tutors, who themſelves ſuffered for their perfidy ſhortly after. As for the reſt of Cleopatra's children, he treated them with great gentleneſs, leaving them to the care of thoſe who were entruſted with their education, who had orders to provide them with every thing ſuitable to their birth. When ſhe was recovered from her late indiſpoſition, he came to viſit her in perſon.—Cleopatra had been preparing for this interview, and made uſe of every method ſhe could think of to propitiate the conqueror, and to gain his affection; but in vain. However, at his departure, Octavianus imagined that he had reconciled her to life, and to the indignity of being ſhown in the intended triumph, which he was preparing for on his return to Rome: but in this he was deceived. Cleopatra, all this time, had kept a correſpondence with Dolabella, a young Roman of high birth, in the camp of Octavianus; who, perhaps, from compaſſion, or ſtronger motives, was intereſted in the misfortunes of that princeſs. From him ſhe learnt the intentions of Octavianus, and that he was determined to ſend her off in three days, together with her children, to Rome. She now therefore determined upon dying; but previouſly intreated permiſſion to pay her oblations at Antony's tomb. This requeſt being granted her, ſhe was carried with her two female attendants to the ſtately monument where he was laid. There ſhe threw herſelf upon his coffin, bewailed her captivity, and renewed her proteſtations not to ſurvive him. She then crowned the tomb with garlands of flowers; and having kiſſed the coffin a thouſand times, ſhe returned home to execute her fatal reſolution. Having bathed, and ordered a ſumptuous banquet, ſhe attired herſelf in the moſt ſplendid manner. She then feaſted as uſual; and ſoon after ordered all but her two attendants, Charmion and Iras, to leave the room. Then, having previouſly ordered an aſp to be ſecretly conveyed to her in a baſket of fruit, ſhe ſent a letter to Octavianus, informing him of her fatal purpoſe, and deſiring to be buried in
252 the ſame tomb with Antony. Octavianus, upon recei-
Her death. ving this letter, inſtantly diſpatched meſſengers to prevent her, but they arrived too late. Upon entering the chamber, they beheld Cleopatra lying dead upon a gilded couch, arrayed in her royal robes. Near her, Iras, one of her faithful attendants, was ſtretched lifeleſs at the feet of her miſtreſs: and Charmion herſelf, almoſt expiring, was ſettling the diadem upon Cleopatra's head. She died at the age of thirty-nine, after having reigned twenty-two years. Her death put an end to the monarchy in Egypt, which had flouriſhed there from time immemorial.

Octavianus ſeemed much troubled at Cleopatra's death as it deprived him of a principal ornament in his intended triumph. However, the manner of it a good deal exalted her character among the Romans, with whom ſuicide was conſidered as a virtue. Her dying requeſt was complied with, her body being laid by Antony's, and a magnificent funeral prepared for her and her two female attendants.

After having ſettled the affairs of Egypt, he left Alexandria in the beginning of September, in the year of Rome 720, with a deſign to return through Syria, Aſia Minor, and Greece, to Italy. On his arrival at Antioch, he found there Tiridates, who had been raiſed to the throne of Parthia in oppoſition to Phrahates, and likewiſe ambaſſadors from Phrahates, who were all come on the ſame errand; to wit, to ſolicit the aſſiſtance of the Romans againſt each other. Octavianus gave a friendly anſwer both to Tiridates and the ambaſſadors of Phrahates, without intending to help either; but rather with a deſign to animate the one againſt the other, and by that means to weaken both, ſo far as to render the Parthian name no longer formidable to Rome. After this, having appointed Meſſala

Rome.

Rome.

That if, in taking upon him the ſovereign power, he dreaded the name of king, a name ſo odious in a commonwealth, he might content himſelf with the title of *Cæſar* or *Imperator*, and under that name, which was well known to the Romans, enjoy all the authority of a king.

This advice Octavianus followed, and from that time laid aſide all thoughts of abdicating the ſovereign power; but, to deceive the people into a belief that they ſtill enjoyed their ancient government, he continued the old magiſtrates, with the ſame name, pomp, and ornaments, but with juſt as much power as he thought fit to leave them. They were to have no military power, but only their old juriſdiction of deciding finally all cauſes, except ſuch as were capital; and though ſome of theſe laſt were left to the governor of Rome, yet the chief he reſerved for himſelf. He paid great court to the people: the very name that covered his uſurpation was a compliment to them; for he affected to call it the power of the tribuneſhip, though he acted as abſolutely by it as if he had called it the dictatorial power. He likewiſe won the hearts of the populace by cheapneſs of proviſions and plentiful markets; he frequently entertained them with ſhows and ſports; and by theſe means kept them in good-humour, and made them forget uſurpation, ſlavery, and every public evil; people in eaſe and plenty being under no temptation of inquiring into the title of their prince, or reſenting acts of power which they do not immediately feel.

As for the ſenate, he filled it with his own creatures, raiſing the number of the conſcript fathers to 1000. He ſupplied ſeveral poor ſenators with money out of the treaſury to diſcharge the public offices, and on all occaſions affected an high regard for that venerable body; but at the ſame time diveſted them of all power, and reduced them to mere cyphers. To prevent them from raiſing new diſturbances in the diſtant provinces, he iſſued an edict, forbidding any ſenator to travel out of Italy without leave, except ſuch as had lands in Sicily, or Narbonne Gaul, which at that time comprehended Languedoc, Provence, and Dauphiny. To theſe provinces, which were near Italy, and in a perfect ſtate of tranquillity, they had full liberty to retire when they pleaſed, and live there upon their eſtates. Before he ended his ſixth conſulſhip, he took a cenſus of the people, which was 41 years after the laſt; and in this the number of the men fit to bear arms amounted to 463,000, the greateſt that had ever been found before. He likewiſe celebrated the games which had been decreed by the ſenate for his victory at Actium; and it was ordered, that they ſhould be celebrated every fifth year, four colleges of prieſts being appointed to take care of them; to wit, the pontifices, the augurs, the ſeptemvirs, and quindecimvirs. The more to gain the affections of the people, he annulled, by one edict, the many ſevere and unjuſt laws, which had been enacted during the triumvirate. He raiſed many public buildings, repaired the old ones, and added many ſtately ornaments to the city, which at this time was, if we may give credit, to ſome ancient writers, about 50 miles in compaſs, and contained near four millions of ſouls, reckoning men, women, children, and ſlaves. He attended buſineſs, reformed abuſes, ſhowed great regard for the Roman name, procured public abundance, pleaſure, and jollity, often

Mæcenas, on the other hand, remonſtrated to him, that he had done too much to go back; that, after ſo much bloodſhed, there could be no ſafety for him but on the throne; that, if he diveſted himſelf of the ſovereign power, he would be immediately proſecuted by the child and friends of the many illuſtrious perſons whom the miſfortunes of the times had forced him to ſacrifice to his ſafety; that it was abſolutely neceſſary for the welfare and tranquillity of the republic, that the ſovereign power ſhould be lodged in one perſon, for [illegible] anarchy &c. Octavianus thanked them both for their friendly advice, but ſhowed himſelf inclined to follow the opinion of Mæcenas; whereupon that able miniſter gave him many wiſe inſtructions and rules of government, which are recited at length by Dio Caſſius, and were ever looked upon as a maſterpiece in politics. Among other things he told him, That he could not fail of being in all his undertakings, happy in his life-time, and immortal after his death, if he never aſſumed to himſelf more than human power; in other words, if he never attempted to govern others as he would not have thoſe he governed himſelf, had he been born to obey and not to command. He added,

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often appearing in perſon at the public diverſions, and in all things ſtudying to render himſelf dear to the populace.

And now Octavianus, entering upon his ſeventh conſulſhip with M. Agrippa, the third time conſul, and finding all things ripe for his deſign, the people being highly pleaſed with his mild government, and the ſenate filled with his creatures, whoſe fortunes depended upon his holding the power he had uſurped, went by the advice of Agrippa and Mæcenas to the ſenate-houſe; and there, in a ſtudied ſpeech, offered to reſign his authority, and put all again into the hands of the people upon the old foundation of the commonwealth; being well appriſed, that the greater part of the conſcript fathers, whoſe intereſts were interwoven with his, would unanimouſly preſs him to the contrary: Which happened accordingly; for they not only interrupted him while he was ſpeaking, but, after he had done, unanimouſly beſought him to take upon himſelf alone the whole government of the Roman empire. He, with a ſeeming reluctance, yielded at laſt to their requeſt, as if he had been compelled to accept of the ſovereignty. By this artifice he compaſſed his deſign, which was, to get the power and authority, which he had uſurped, confirmed to him by the ſenate and people for the ſpace of 10 years: for he would not accept of it for a longer term, pretending he ſhould in that time be able to ſettle all things in ſuch peace and order that there would be no further need of his authority, but that he might then eaſe himſelf of the burden, and put the government again into the hands of the ſenate and people. This method he took to render the yoke leſs heavy; but with a deſign to renew his leaſe, if we may be allowed the expreſſion, as ſoon as the ten years were expired; which he did accordingly from ten years to ten years as long as he lived, all the while governing the whole Roman empire with an abſolute and uncontrouled power. With this new authority the ſenate reſolved to diſtinguiſh him with a new name. Some of the conſcript fathers propoſed the name of *Romulus*, thereby to import that he was another founder of Rome; others offered other titles; but the venerable name of *Auguſtus*, propoſed by Manutius Plancus, ſeemed preferable to all the reſt, as it expreſſed more dignity and reverence than authority, the moſt ſacred things, ſuch as temples, and places conſecrated by augurs, being termed by the Romans *Auguſta*. Octavianus himſelf was inclined to aſſume the name of *Romulus*; but fearing he ſhould be ſuſpected of affecting the kingdom, he declined it and took that of *Auguſtus*, by which we ſhall henceforth diſtinguiſh him.

255 The ſenate intreat him to accept the ſovereignty.

256 He takes the title of Auguſtus.

Though the whole power of the ſenate and people was now veſted in Auguſtus, yet, that he might ſeem to ſhare it with the conſcript fathers, he refuſed to govern all the provinces; aſſigning to the ſenate ſuch as were quiet and peaceable; and keeping to himſelf thoſe which, bordering upon barbarous nations, were moſt expoſed to troubles and wars, ſaying, He deſired the fathers might enjoy their power with eaſe and ſafety, while he underwent all the dangers and labours: but, by this politic conduct, he ſecured all the military power to himſelf; the troops lying in the provinces he had choſen; and the others, which were governed by the ſenate, being quite deſtitute of forces. The latter were called *ſenatorial*, and the former *imperial*, provinces. Over the provinces of both ſorts were ſet men of diſtinction, to wit, ſuch as had been conſuls or prætors, with the titles of *proconſul* and *proprætor*; but the government of Egypt was committed to a private knight, Auguſtus fearing leſt a perſon of rank, depending upon the wealth and ſituation of that country, might raiſe new diſturbances in the empire. All theſe governors held their employment only for a year, and were upon the arrival of their ſucceſſors to depart their provinces immediately, and not fail to be at Rome within three months at the fartheſt. This diviſion of the provinces was made, according to Ovid, on the ides of January; whereas he was veſted by the ſenate and people with the ſovereign power on the ſeventh of the ides of the ſame month, as is manifeſt from the Narbonne marbles: and from that time many writers date the years of his empire. Thus ended the greateſt commonwealth, and at the ſame time began the greateſt monarchy, that had ever been known; a monarchy which infinitely excelled in power, riches, extent and continuance, all the empires which had preceded it.

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257 Extent &c. of the Roman empire.

It comprehended the greateſt and by far the beſt part of Europe, Aſia, and Africa, being near 4000 miles in length, and about half as much in breadth. As to the yearly revenues of the empire, they have by a moderate computation been reckoned to amount to forty millions ſterling. But the Romans themſelves now ran headlong into all manner of luxury and effeminacy. The people were become a mere mob; thoſe who were wont to direct mighty wars, to raiſe and depoſe great kings, to beſtow or take away potent empires, were ſo ſunk and debauched, that, if they had but bread and ſhows, their ambition went no higher. The nobility were indeed more polite than in former ages; but at the ſame time idle, venal, vicious, inſenſible of private virtue, utter ſtrangers to public glory or diſgrace, void of zeal for the welfare of their country, and ſolely intent on gaining the favour of the emperor, as knowing that certain wealth and preferment were the rewards of ready ſubmiſſion, acquieſcence, and flattery. No wonder, therefore, that they loſt their liberty, without being ever again able to retrieve it.

258 Military eſtabliſhments of Auguſtus.

Auguſtus, now abſolute maſter of the Roman empire, took all methods to ingratiate himſelf with his ſoldiers, by whoſe means he had attained ſuch a height of power. With this view, he diſperſed them through different parts of Italy in 32 colonies, that he might the more eaſily reaſſemble them on proper occaſions. He kept 25 legions conſtantly on foot; 17 of which were in Europe; viz. eight on the Rhine, four on the Danube, three in Spain, and two in Dalmatia. The other eight were ſent into Aſia and Africa; four of them being quartered in the neighbourhood of the Euphrates, two in Egypt, and two in Africa Propria, that is, the ancient dominions of Carthage. All theſe forces, amounting to 170,650 men, were conſtantly kept on foot by the Roman emperors for ſeveral ages. In the neighbourhood of Rome were always quartered 12 cohorts, that is, about 10,000 men; nine of which were called *prætorian cohorts*; the other three *city cohorts*. Theſe were eſtabliſhed as a guard to the emperor, and to maintain peace and tranquillity in the city, but had often a great ſhare in the diſturbances which took place throughout the empire. Beſides theſe, Auguſtus conſtantly kept at ſea two powerful navies; the one riding at

Rome. and near Ravenna in the Adriatic ſea, to command Dalmatia, Greece, Cyprus, and the reſt of the eaſtern provinces; the other at Miſenum in the Mediterranean, to keep in awe the weſtern parts of the empire. They were likewiſe to keep the ſeas clear of pirates, to convey the proviſions which ſhould be brought to Rome the annual tribute from the provinces beyond ſea, and to tranſport corn and other proviſions neceſſary for the relief and maintenance of the city. As to the civil government, Auguſtus enacted ſeveral new laws, and reformed ſome of the old ones: however, he affected to do nothing without the advice of the ſenate; who were ſo well pleaſed with the complaiſance ſhowed them on all occaſions, that to the reſt of his titles they added that of *Pater Patriæ*, or "Father of his Country."

And now Auguſtus having ſettled all things with regard to the civil and military eſtabliſhments of the empire, turned his arms againſt the Spaniſh nations called the *Cantabrians* and *Aſturians*, who had never been fully ſubdued. The war, however, terminated as uſual, in favour of the Romans; and theſe brave nations were forced to receive the yoke, though not without the moſt violent reſiſtance on their part, and the utmoſt difficulty on that of the Romans (See ASTURIA). By this and his other conqueſts the name of Auguſtus became ſo celebrated, that his friendſhip was courted by the moſt diſtant monarchs: Phrahates king of Parthia conſented to a treaty with him upon his own terms, and gave him four of his own ſons with their wives and children as hoſtages for the performance of the articles; and as a further inſtance of his reſpect, he delivered up the Roman eagles and other enſigns which had been taken from Craſſus at the battle of Carrhæ. He received alſo an embaſſy from the king of India, with a letter written in the Greek tongue, in which the Indian monarch informed him, that "though he reigned over 600 Kings, he had ſo great a value for the friendſhip of Auguſtus, that he had ſent this embaſſy on ſo long a journey on purpoſe to deſire it of him; that he was ready to meet him at whatſoever place he pleaſed to appoint; and that, upon the firſt notice, he was ready to aſſiſt him in whatever was right." This letter he ſubſcribed by the name of *Porus king of India*. Of the ambaſſadors who ſet out from India, three only reached the preſence of Auguſtus, who was at that time in the Iſland of Samos, the others dying by the way. Of the three ſurvivors one was named *Zarmar*, a gymnoſophiſt, who followed the emperor to Athens, and there burnt himſelf in his preſence; it being cuſtomary for the gymnoſophiſts to put an end to their lives in this manner, when they thought they had lived long enough, or apprehended ſome misfortune. Soon after this the Roman dominions were extended farther eaſtward over the Garamantes, a people whoſe country reached as far as the river Niger. All this time the emperor continued to make new regulations for the good of the ſtate; and among other things cauſed the Sybylline oracles to be reviewed. Many of theſe he rejected; but ſuch as were reckoned authentic, he cauſed to be copied by the pontifices themſelves, and lodged them in golden cabinets, which he placed in the temple of Apollo, built by him in his palace. The Roman empire had now extended itſelf ſo far, that it ſeemed to have arrived at the limits preſcribed to it by nature; and as ſoon as this was the caſe, it began to be attacked by thoſe nations which in proceſs of time were to overthrow it. The Germans, by which name the Romans confounded a great number of nations dwelling in the northern parts of Europe, began to make incurſions into Gaul. Their firſt attempt happened in the year 17 B. C. when they at firſt gained an inconſiderable advantage, but were ſoon driven back with great loſs. Soon after this the Rhæti, who ſeem to have inhabited the country bordering on the lake of Conſtance, invaded Italy, where they committed dreadful devaſtations, putting all the males to the ſword without diſtinction of rank or age; nay, we are told, that, when women with child happened to fall into their hands, they conſulted their augurs whether the child was male or female; and if they pronounced it a male, the mother was immediately maſſacred. Againſt theſe barbarians Auguſtus ſent Druſus the ſecond ſon of the empreſs Livia; who, though very young, found means to gain a complete victory with very little loſs on his part. Thoſe who eſcaped took the road to Gaul, being joined by the Vindelici, another nation in the neighbourhood; but Tiberius, the elder brother of Druſus, marched againſt them, and overthrew them ſo completely, that the Rhæti, Vindelici, and Norici, three of the moſt barbarous nations in thoſe parts, were fain to ſubmit to the pleaſure of the emperor. To keep their country in awe, Tiberius planted two colonies in Vindelicia, opening a road from thence into Noricum and Rhætia. One of the cities which he built for the defence of his colonies was called *Dryſomagus*; the other, *Auguſta Vindelicorum*; both of which are now known by the names of *Nimingben* and *Augſburg*.

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260 The empire invaded by the northern barbarians.

259 His friendſhip courted by the kings of Parthia and India.

261 Auguſtus created pontifex maximus.

Auguſtus, who had long ſince obtained all the temporal honours which could well be conferred upon him, now began to aſſume thoſe of the ſpiritual kind alſo; being in the year 13 B. C. created Pontifex Maximus: an office which he continued to hold till his death; as did alſo his ſucceſſors till the time of Theodoſius. By virtue of this office he corrected a very groſs miſtake in the Roman kalendar; for the pontifices having, for the ſpace of 36 years, that is, ever ſince the reformation of Julius Cæſar, made every third year a leap year, inſtead of every fourth, twelve days had been inſerted inſtead of nine, ſo that the Roman year conſiſted of three days more than it ought to have done. Theſe three ſuperfluous days having been thrown out, the form of the year has ever ſince been regularly obſerved, and is ſtill known by the name of the *old ſtyle* in uſe among us. On this occaſion he gave his own name to the month of Auguſt, as Julius Cæſar had formerly done to the month of July.

262 Tiberius ſucceeds Agrippa.

In the year 11 B. C. Agrippa died, and was ſucceeded in his high employment of governor of Rome by Tiberius; but, before inveſting him with this ample power, the emperor cauſed him to divorce his wife Agrippina (who had already brought him a ſon, and was then big with child), in order to marry Julia the widow of Agrippa and daughter of the emperor. Julia was a princeſs of an infamous character, as was known to almoſt every body excepting Auguſtus himſelf; however, Tiberius made no heſitation, through fear of diſobliging the emperor.

The emperor now ſent his two ſons Tiberius and Druſus againſt the northern nations. Tiberius reduced

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ced the Pannonians, who had attempted to ſhake off the yoke after the death of Agrippa. Druſus performed great exploits in Germany; but while he was conſidering whether he ſhould penetrate further into theſe northern countries, he was ſeized with a violent fever, which carried him off in a few days. He was ſucceeded in his command by Tiberius, who is reported to have done great things, but certainly made no permanent conqueſts in Germany. However, he was honoured with a triumph, and had the tribunitial power for five years conferred upon him; which was no ſooner done, than, to the great ſurpriſe of Auguſtus and the whole city, he deſired leave to quit Rome and retire to Rhodes. Various reaſons have been aſſigned for this extraordinary reſolution; ſome are of opinion that it was in order to avoid being an eye-witneſs of the debaucheries of his wife Julia, who ſet no bounds to her lewdneſs; though others imagine that he was offended at the honours which Auguſtus had conferred on his grandchildren, eſpecially at his ſtyling them *princes of the Roman youth*; which left him no hopes of enjoying the ſovereign power. However, Auguſtus poſitively refuſed to comply with his requeſt, and his mother Livia uſed her utmoſt endeavours to diſſuade him from his reſolution: but Tiberius continued obſtinate; and finding all other means ineffectual, at laſt ſhut himſelf up in his houſe, where he abſtained four whole days from nouriſhment. Auguſtus, perceiving that he could not get the better of his obſtinate and inflexible temper, at laſt complied with his requeſt. Tiberius ſoon grew weary of his retirement, and, giving out that he had left Rome only to avoid giving umbrage to the emperor's two grandchildren, deſired leave to return; but Auguſtus was ſo much diſpleaſed with his having obſtinately inſiſted on leaving Rome, that he obliged him to remain at Rhodes for ſeven years longer. His mother, with much ado got him declared the emperor's lieutenant in thoſe parts; but Tiberius, dreading the reſentment of his father-in-law, continued to act as a private perſon during the whole time of his ſtay there.

263 Deſires leave to retire to Rhodes.

264 Is confined there by Auguſtus for ſeven years.

A profound peace now reigned throughout the whole empire; and in conſequence of this the temple of Janus was ſhut, which had never before happened ſince the time of Numa Pompilius. During this pacific interval, the Saviour of mankind was born in Judæa, as is recorded in the ſacred hiſtory, 748 years after the foundation of Rome by Romulus. Three years after, Tiberius returned to the city, by permiſſion of Auguſtus, who yet would not allow him to bear any public office; but in a ſhort time, Lucius Cæſar, one of the emperor's grandchildren, died, not without ſuſpicions of his being poiſoned by Livia. Tiberius ſhowed ſuch great concern for his death, that the affection of Auguſtus for him returned; and it is ſaid that he would at that time have adopted Tiberius, had it not been for giving umbrage to his other grandſon Caius Cæſar. This obſtacle, however, was ſoon after removed; Caius being taken off alſo, not without great ſuſpicions of Livia, as well as in the former caſe. Auguſtus was exceedingly concerned at his death, and immediately adopted Tiberius as his ſon; but adopted alſo Agrippa Poſthumius, the third ſon of the famous Agrippa; and obliged Tiberius to adopt Germanicus the ſon of his brother Druſus, though he had a ſon of his own named *Druſus*; which was a great mortification to him. As to Agrippa, however, who might have been an occaſion of jealouſy, Tiberius was ſoon freed from him, by his diſgrace and baniſhment, which very ſoon took place, but on what account is not known.

265 Birth of Chriſt.

266 Auguſtus adopts Tiberius as his ſon.

The northern nations now began to turn formidable: and though it is pretended that Tiberius was always ſucceſsful againſt them, yet about this time they gave the Romans a moſt terrible overthrow; three legions and ſix cohorts, under Quintilius Varus, being almoſt entirely cut in pieces. Auguſtus ſet no bounds to his grief on this fatal occaſion. For ſome months he let his hair and beard grow, frequently tearing his garments, knocking his head againſt the wall, and crying out like a diſtracted perſon, "Reſtore the legions, Varus!" Tiberius, however, was ſoon after ſent into Germany; and for his exploits there he was honoured with a triumph. Auguſtus now took him for his colleague in the ſovereignty; after which he ſent Germanicus againſt the northern barbarians, and Tiberius into Illyricum. This was the laſt of his public acts; for having accompanied Tiberius for part of his journey, he died at Nola in Campania, in the 76th year of his age, and 56th of his reign. Livia was ſuſpected of having haſtened his death by giving him poiſoned figs. Her reaſon for this was, that ſhe feared a reconciliation between him and his grandſon Agrippa whom he had baniſhed, as we have already related. Some months before, the emperor had paid a viſit to Agrippa, unknown to Livia, Tiberius, or any other perſon, excepting one Fabius Maximus. This man, on his return home, diſcovered the ſecret to his wife, and ſhe to the empreſs. Auguſtus then perceiving that Fabius had betrayed him, was ſo provoked, that he baniſhed him from his preſence for ever; upon which the unfortunate Fabius, unable to ſurvive his diſgrace, laid violent hands on himſelf.

267 Death of Auguſtus.

Tiberius who ſucceeded to the empire, reſolved to ſecure himſelf on the throne by the murder of Agrippa; whom accordingly he cauſed to be put to death by a military tribune. Though this might have been a ſufficient evidence of what the Romans had to expect, the death of Auguſtus was no ſooner known, than the conſuls, ſenators, and knights, to uſe the expreſſion of Tacitus, ran headlong into ſlavery. The two conſuls firſt took an oath of fidelity to the emperor, and then adminiſtered it to the ſenate, the people, and the ſoldiery. Tiberius behaved in a dark myſterious manner, taking care to rule with an abſolute ſway, but at the ſame time ſeeming to heſitate whether he ſhould accept the ſovereign power or not; inſomuch that one of the ſenators took the liberty to tell him, that other men were ſlow in performing what they had promiſed, but he was ſlow in promiſing what he had already performed. At laſt, however, his modeſty was overcome, and he declared his acceptance of the ſovereignty in the following words: "I accept the empire, and will hold it, till ſuch time as you, conſcript fathers, in your great prudence, ſhall think proper to give repoſe to my old age."

268 Diſſimulation of Tiberius.

Tiberius had ſcarce taken poſſeſſion of the throne, when news were brought him that the armies in Pannonia and Germany had mutinied. In Pannonia, three legions having been allowed ſome days of relaxation from their uſual duties, either to mourn for the death of Auguſtus, or to rejoice for the acceſſion of Tiberius, grew turbulent and ſeditious. The Pannonian mutineers

269 Revolt of the Pannonian and German legions.

Rome. neers were headed by one Percennius, a common soldier; who, before he served in the army, had made it his business to attend the playhouses and theatres and playhouses to hire or applaud such actors as he liked or disliked. Instigated by the ambition of this man, they openly mutinied; and though Domitius Blasio was sent to them, and at last Drusus to endeavour to quell the tumult, they murdered some of their officers, and insulted others, who had been rendered by an eclipse of the moon, they began to think worthy signs of repentance. Of this favourable disposition Drusus took advantage; and even got the ringleaders of the revolt condemned and executed. Immediately after this they were again terrified by such violent storms and dreadful rains, that they quietly submitted, and every thing in that quarter was restored to tranquillity.

The revolt of the German legions threatened much more danger, as they were more numerous than those of Pannonia. They proceeded nearly in the same way as the Pannonian legions, falling upon their officers, especially the centurions, and beating them till they almost expired, drove them out of the camp, and some of them were even thrown into the Rhine. Germanicus, who was at that time in Gaul, hastened to the camp on the first news of the disturbance; but being unable to prevail on them to return to their duty, he was obliged to feign letters from Tiberius, granting all their demands. These were, That all those who had served 20 years should be discharged; that such as had served 16 should be deemed veterans: and that some legacies which had been left them by Augustus should not only be paid immediately, but doubled. This last article he was obliged to discharge without delay out of the money which he and his friends had brought to defray the expences of their journey; and on receiving it, the troops quietly retired to their winter-quarters. But in the mean time, some deputies sent either by Tiberius or the senate, probably to quell the sedition, occasioned fresh disturbances; for the legionaries, taking it into their heads that these deputies were come to revoke the concessions which Germanicus had made, were with difficulty prevented from tearing them in pieces; and, notwithstanding the utmost endeavours of Germanicus, behaved in such an outrageous manner, that the general thought proper to send off his wife Agrippina, with her infant son Claudius, she herself at that time being big with child. As she was attended by many women of distinction, wives of the chief officers in the camp, their tears and lamentations on parting with their husbands occasioned a great uproar, and drew together the soldiers from all quarters. A new scene ensued, which made an impression even upon the most obdurate. They could not behold, without shame and compassion, so many women of rank travelling thus forlorn, without a centurion to attend them, or a soldier to guard them; and their general's wife among the rest, carrying her infant child in her arms, and preparing to implore shelter against the treachery of the Roman legions. This made such a deep impression on the minds of many of them, that some ran to stop her, while the rest recurred to Germanicus, earnestly intreating him to recall his wife, and to prevent her from being obliged to seek a sanctuary among foreigners. The general approved the favourable disposition, and in a short time they of their own accord seized and massacred the ringleaders of the revolt. Still, however, two of the legions continued in their disobedience. Against them therefore Germanicus determined to lead those who had returned to their duty. With this view he prepared vessels; but before he embarked his troops, he wrote a letter to Cæcina who commanded them, acquainting him that he approached with a powerful army, resolved to put them all to the sword without distinction, if they did not prevent him by taking vengeance on the guilty themselves. This letter Cæcina communicated only to the chief officers and such of the soldiers as had all along disapproved of the revolt, exhorting them at the same time to enter into an association against the seditious, and put to the sword such as had involved them in the present ignominy and guilt. This proposal was approved of, and a cruel massacre immediately took place; insomuch that when Germanicus came to the camp, he found the greatest part of the legions destroyed. This greatly affected the humane Germanicus, who caused the bodies of the slain to be burnt, and celebrated their obsequies with the usual solemnities; however the sedition was thus effectually quelled, after which he led his army into Germany. There he performed many great exploits †; but still all that he could perform was far from freeing the empire from so dangerous and troublesome an enemy. In the year 19, he died, of poison, as was supposed, given by Piso, his partner in the government of Syria, to which Germanicus had been promoted after his return from the north.

272 The revolt quelled by a dreadful massacre.

† See Germany.

In the mean time, Tiberius, though he affected to court the favour of the people by various methods, yet showed himself in general such a cruel and bloodthirsty tyrant, that he became the object of universal abhorrence. Though he had hated Germanicus in his heart, he punished Piso with death: but in about a year after the death of Germanicus, having now no object of jealousy to keep him in awe, he began to pull off the mask, and appear more in his natural character than before. He took upon himself the interpretation of all political measures, and began daily to diminish the authority of the senate; which design was much facilitated, by their own aptitude to slavery; so that he despised their meanness, while he enjoyed its effects. A law at that time subsisted, which made it treason to form any injurious attempt against the majesty of the people. Tiberius assumed to himself the interpretion and enforcement of this law; and extended it not only to the cases which really affected the safety of the state, but to every conjuncture that could possibly be favourable to his hatred or suspicions. All freedom was now therefore banished from convivial meetings, and diffidence reigned amongst the dearest relations. The law of offended majesty being revived, many persons of distinction fell a sacrifice to it.

271 Tiberius a cruel tyrant.

In the beginning of these cruelties, Tiberius took into his confidence Sejanus, a Roman knight, but by birth a Volscian, who found out the method of gaining his confidence, by the most refined degree of dissimulation, being an over-match for his master in his own arts. He was made by the emperor captain of the Prætorian guards, one of the most confidential trusts in the state, and extolled in the senate as a worthy associate in his labours. The servile senators, with ready

272 Rise of Sejanus a wicked minister.

Rome.

ready adulation, ſet up the ſtatues of the favourite beſide thoſe of Tiberius, and ſeemed eager to pay him ſimilar honours. It is not well known whether he was the adviſer of all the cruelties that enſued ſoon after; but certain it is, that, from the beginning of his miniſtry, Tiberius ſeemed to become more fatally ſuſpicious.

273 His infamous conduct.

It was from ſuch humble beginnings that this miniſter even ventured to aſpire at the throne, and was reſolved to make the emperor's fooliſh confidence one of the firſt ſteps to his ruin. However, he conſidered that cutting off Tiberius alone would rather retard than promote his deſigns while his ſon Druſus and the children of Germanicus were yet remaining. He therefore began by corrupting Livia, the wife of Druſus; whom, after having debauched her, he prevailed upon to poiſon her huſband. This was effected by means of a ſlow poiſon (as we are told), which gave his death the appearance of a caſual diſtemper. Tiberius, in the mean time, either naturally phlegmatic, or at leaſt not much regarding his ſon, bore his death with great tranquillity. He was even heard to jeſt upon the occaſion; for when the ambaſſadors from Troy came ſomewhat late with their compliments of condolence, he anſwered their pretended diſtreſſes, by condoling with them alſo upon the loſs of Hector.

Sejanus having ſucceeded in this, was reſolved to make his next attempt upon the children of Germanicus, who were undoubted ſucceſſors to the empire. However he was fruſtrated in his deſigns, both with regard to the fidelity of their governors, and the chaſtity of Agrippina their mother. Whereupon he reſolved upon changing his aims, and removing Tiberius out of the city; by which means he expected more frequent opportunities of putting his deſigns into execution. He therefore uſed all his addreſs to perſuade Tiberius to retire to ſome agreeable retreat, remote from Rome. By this he expected many advantages, ſince there could be no acceſs to the emperor but by him. Thus all letters being conveyed to the prince by ſoldiers at his own devotion, they would paſs through his hands; by which means he muſt in time become the ſole governor of the empire, and at laſt be in a capacity of removing all obſtacles to his ambition. He now therefore began to inſinuate to Tiberius the great and numerous inconveniences of the city, the fatigues of attending the ſenate, and the ſeditious temper of the

274 Tiberius retires from Rome.

inferior citizens of Rome. Tiberius, either prevailed upon by his perſuaſions, or purſuing the natural turn of his temper, which led to indolence and debauchery, in the twelfth year of his reign left Rome, and went into Campania, under pretence of dedicating temples to Jupiter and Auguſtus. After this, though he removed to ſeveral places, he never returned to Rome; but ſpent the greateſt part of his time in the iſland of Caprea, a place which was rendered as infamous by his pleaſures as deteſtable by his cruelties, which were ſhocking to human nature. Buried in this retreat, he gave himſelf up to his pleaſures, quite regardleſs of the miſeries of his ſubjects. Thus an inſurrection of the Jews, upon placing his ſtatue in Jeruſalem, under the government of Pontius Pilate, gave him no ſort of uneaſineſs. The falling of an amphitheatre at Fidenæ, in which 50,000 perſons were either killed or wounded, no way affected his repoſe. He was only employed in ſtudying how to vary his odious pleaſures, and forcing his feeble frame, ſhattered by age and former debaucheries, into the enjoyment of them. Nothing can preſent a more horrid picture than the retreat of this impure old man, attended by all the miniſters of his perverted appetites. He was at this time 67 years old; his perſon was moſt diſpleaſing; and ſome ſay the diſagreeableneſs of it, in a great meaſure, drove him into retirement. He was quite bald before; his face was all broke out into ulcers, and covered over with plaſters; his body was bowed forward, while its extreme height and leanneſs increaſed its deformity. With ſuch a perſon, and a mind ſtill more hideous, being gloomy, ſuſpicious, and cruel, he ſat down with a view rather of forcing his appetites than ſatisfying them. He ſpent whole nights in debaucheries at the table; and he appointed Pomponius Flaccus and Lucius Piſo to the firſt poſts of the empire, for no other merit than that of having ſat up with him two days and two nights without interruption. Theſe he called his friends of all hours. He made one Novelius Torgnatus a prætor for being able to drink off five bottles of wine at a draught. His luxuries of another kind were ſtill more deteſtable, and ſeemed to increaſe with his drunkenneſs and gluttony. He made the moſt eminent women of Rome ſubſervient to his luſts; and all his inventions only ſeemed calculated how to make his vices more extravagant and abominable. The numberleſs obſcene medals dug up in that iſland at this day bear witneſs at once to his ſhame, and the veracity of the hiſtorians who have deſcribed his debaucheries. In ſhort, in this retreat, which was ſurrounded with rocks on every ſide, he quite gave up the buſineſs of the empire; or, if he was ever active, it was only to do miſchief. But, from the time of his retreat, he became more cruel, and Sejanus always endeavoured to increaſe his diſtruſts. Secret ſpies and informers were placed in all parts of the city, who converted the moſt harmleſs actions into ſubjects of offence. If any perſon of merit teſtified any concern for the glory of the empire, it was immediately conſtrued into a deſign to obtain it. If another ſpoke with regret of former liberty he was ſuppoſed to aim at re-eſtabliſhing the commonwealth. Every action became liable to forced interpretations; joy expreſſed an hope of the prince's death; melancholy, an envying of his proſperity. Sejanus found his aim every day ſucceeding; the wretched emperor's terrors were an inſtrument that he wrought upon at his pleaſure, and by which he levelled every obſtacle to his deſigns. But the chief objects of his jealouſy were the children of Germanicus, whom he reſolved to put out of the way. He therefore continued to render them obnoxious to the emperor, to alarm him with falſe reports of their ambition, and to terrify them with alarms of his intended cruelty. By theſe means, he ſo contrived to widen the breach, that he actually produced on both ſides thoſe diſpoſitions which he pretended to obviate; till at length, the two princes Nero and Druſus were declared enemies to the ſtate, and afterwards ſtarved to death in priſon; while Agrippina their mother was ſent into baniſhment.

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175 His abominable conduct in his retreat.

276 The children of Germanicus put to death.

In this manner Sejanus proceeded, removing all who ſtood between him and the empire, and every day increaſing in confidence with Tiberius, and power with the ſenate. The number of his ſtatues exceeded even

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thefe of the emperor; people fwore by his fortune, in the fame manner as they would have done had he been actually upon the throne, and he was more dreaded at Rome even than the tyrant who actually enjoyed the empire. But the ruin of his adherents only prepared the way for the greatneſs of his downfall. All we know of his diſputes with the emperor is, that Antius Sabinus was the man who had the boldneſs to accuſe him. Antonia, the mother of Germanicus, headed the accuſation. What were the particulars of his crimes, we cannot learn: but certain it is, that he attempted to ſupplant the emperor, by aiming at the life of Tiberius. He was very near ſucceeding in his deſign when, his practices were diſcovered, and his own life was ſubſtituted for that againſt which he aimed. Tiberius, ſenſible of the traitor's power, proceeded with his uſual diſſimulation in having him apprehended. He granted him new honours at the very time he reſolved his death, and took him as his colleague in the conſulſhip. The emperor's letter to the ſenate began only with ſlight complaints againſt his friend, but ended with an order for putting him in priſon. He intreated the fathers to protect a poor old man, as he was, againſt envy and hatred; and in the mean time, prepared ſhips for his flight, and ordered ſoldiers for his ſecurity. The ſenate, who had long been jealous of the favourite's power, and dreaded his cruelty, immediately took this opportunity of going beyond their orders. Inſtead of ſentencing him to impriſonment, they directed his execution. A ſtrange revolution now appeared in the city; of thoſe numbers that but a moment before were preſſing into the preſence of Sejanus, with offers of ſervice and adulation, not one was found that would ſeem to be of his acquaintance; he was deſerted by all; and thoſe who had formerly received the greateſt benefits from him, ſeemed now converted into his moſt inveterate enemies. As he was conducting to execution, the people loaded him with inſult and execration. He attempted to hide his face with his hands; but even this was denied him and his hands were ſecured. Nor did the rage of his enemies ſubſide with his death; his body was ignominiouſly dragged about the ſtreets, and his whole family executed with him.

His death only lighted up the emperor's rage for further executions. The priſons were crowded with pretended accomplices in the conſpiracy of Sejanus. Tiberius began to grow weary of particular executions; he therefore gave orders that all the accuſed ſhould be put to death together without further examination. Of 20 ſenators, whom he choſe for his council, he put 16 to death. "Let them hate me (cried he) ſo long as they obey me." He then averred, that Priam was an happy man, who outlived all his poſterity. In this manner there was not a day without ſome barbarous execution, in which the ſufferers were obliged to undergo the moſt ſhameful indignities and exquiſite torments. When one Camillus had killed himſelf to avoid the torture: "Ah (cried Tiberius), how that man has been deceived!" When a priſoner earneſtly intreated that he would not defer his death: "No (cried the tyrant), I am not ſo unkind to my friend, to ſhorten your torments." He often had in his preſence with the ſtrings of the wrists that were put to death before him; and in the days of ſacrifice the rack was to be ſeen, from which he ordered ſuch as had diſpleaſed him to be thrown headlong. As he was one day examining ſome perſons upon the rack, he was told that an old friend of his was come from Rhodes to ſee him. Tiberius ſuppoſing him brought for the purpoſe of information, immediately ordered him to the torture; and when he was convinced of his miſtake, he ordered him to be put to death, to prevent further diſcovery.

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In this manner did the tyrant continue to torment others, although he was himſelf ſtill more tortured by his own ſuſpicions; ſo that in one of his letters to the ſenate, he confeſſed that the gods and goddeſſes had ſo afflicted and confounded him, that he knew not what or how to write. In the mean time the frontier provinces were invaded with impunity by the barbarians. Moeſia was ſeized on by the Dacians and Sarmatians; Gaul was waſted by the Germans, and Armenia conquered by the king of Parthia. Tiberius, however, was ſo much a ſlave to his brutal appetites, that he left his provinces wholly to the care of his lieutenants, and they were intent rather on the accumulation of private fortune than the ſafety of the ſtate. Such a total diſorder in the empire produced ſuch a degree of anxiety in him who governed it, that he was heard to wiſh, that heaven and earth might periſh when he died. At length, however, in the 22d year of his reign, he began to feel the approaches of his diſſolution, and all his appetites totally to forſake him. He now, therefore, found it was time to think of a ſucceſſor, and heſitated for a long while, whether he ſhould chooſe Caligula, whoſe vices were too apparent to eſcape his obſervation. He had been often heard to ſay, that this youth had all the faults of Sylla, without his virtues; that he was a ſerpent that would ſting the empire, and a Phaeton that would ſet the world in a flame. However, notwithſtanding all his well-grounded apprehenſions, he named him for his ſucceſſor; willing, perhaps, by the enormity of Caligula's conduct to cover the memory of his own.

279 Chooſes Caligula for his ſucceſſor.

But though he thought fit to chooſe a ſucceſſor, he concealed his approaching decline with the utmoſt care, as if he was willing at once to hide it from the world and himſelf. He long had a contempt for phyſic, and refuſed the advice of ſuch as attended him: he even ſeemed to take a pleaſure in being preſent at the ſports of the ſoldiers, and ventured himſelf to throw a javelin at a boar that was let looſe before him. The effort which he made upon this occaſion cauſed a pain in his ſide, which haſtened the approaches of death: ſtill, however, he ſeemed willing to avoid his end; and ſtrove, by change of place, to put off the inquietude of his own reflections. He left his favourite iſland, and went upon the continent, where he at laſt fixed at the promontory of Miſenum. It was here that Charicles, his phyſician, pretending to kiſs his hand, felt the failure of his pulſe, and appriſed Macro, the emperor's prefect elect, that he had not above two days to live. Tiberius, on the contrary, who had perceived the art of Charicles, did all in his power to impreſs his attendants with an opinion of his health: he commanded a table to be ſet for him; he ſeemed to take more than uſual care of his perſon, and read the letter of the ſenate, in which they had cloſed ſome periods he had written againſt, with great indignation. He reſolved

Rome. resolved to take signal vengeance of their disobedience, and meditated new schemes of cruelty, when he fell into such faintings, as all believed were fatal. It was in this situation, that, by Macro's advice, Caligula prepared to secure the succession. He received the congratulations of the whole court, caused himself to be acknowledged by the Prætorian soldiers, and went forth from the emperor's apartment amidst the applauses of the multitude; when all of a sudden he was informed that the emperor was recovered, that he had begun to speak, and desired to eat. This unexpected account filled the whole court with terror and alarm: every one who had before been earnest in testifying their joy, now re-assumed their pretended sorrow, and left the new emperor, through a feigned solicitude for the fate of the old. Caligula himself seemed thunderstruck; he preserved a gloomy silence, expecting nothing but death, instead of the empire at which he had aspired. Macro, however, who was hardened in crimes, ordered that the dying emperor should be dispatched, by smothering him with pillows, or, as others will have it, by poison. In this manner Tiberius died, in the 78th year of his age, after reigning 22.

280 Corruptions of the Romans at this time. The Romans were, at this time, arrived at their highest pitch of effeminacy and vice. The wealth of almost every nation of the empire, having, for some time, circulated through the city, brought with it the luxuries peculiar to each country; so that Rome presented a detestable picture of various pollution. In this reign lived Apicius, so well known for having reduced gluttony into a system; some of the most notorious in this way, thought it no shame to give near 100 pounds for a single fish, and exhaust a fortune of 50,000 pounds in one entertainment. Debaucheries of every other kind kept pace with this; while the detestable folly of the times thought it was refining upon pleasure to make it unnatural. There were at Rome men called *spintriæ*, whose sole trade it was to study new modes of pleasure; and these were universally favourites of the great. The senators were long fallen from their authority, and were no less estranged from their integrity and honour. Their whole study seemed to be, how to invent new ways of flattering the emperor, and various methods of tormenting his supposed enemies. The people were still more corrupt: they had, for some years, been accustomed to live in idleness, upon the donations of the emperor; and, being satisfied with subsistence, entirely gave up their freedom. Too effeminate and cowardly to go to war, they only railed against their governors; so that they were bad soldiers and seditious citizens. In the

281 Christ crucified. 18th year of this monarch's reign, Christ was crucified. Shortly after his death, Pilate is said to have written to Tiberius an account of his passion, resurrection, and miracles; upon which the emperor made a report of the whole to the senate, desiring that Christ might be accounted a god by the Romans. But the senate being displeased that the proposal had not come first from themselves, refused to allow of his apotheosis; alleging an ancient law, which gave them the superintendance in all matters of religion. They even went so far, as by an edict to command that all Christians should leave the city: but Tiberius, by another edict, threatened death to all such as should accuse them; by which means they continued unmolested during the rest of his reign.

Rome. No monarch ever came to the throne with more advantages than Caligula. He was the son of Germanicus, who had been the darling of the army and the people. He was bred among the soldiers, from whom he received the name of *Caligula*, from the short buskin, called *caliga*, that was worn by the common centinels, and which was also usually worn by him. As he approached Rome, the principal men of the state went out in crowds to meet him. He received the congratulations of the people on every side, all equally pleased in being free from the cruelties of Tiberius, and in hoping new advantages from the virtues of his successor.

Caligula seemed to take every precaution to impress them with the opinion of an happy change. Amidst the rejoicings of the multitude, he advanced mourning, with the dead body of Tiberius, which the soldiers brought to be burnt at Rome, according to the custom of that time. Upon his entrance into the city, he was received with new titles of honour by the senate, whose chief employment seemed now to be, the art of increasing their emperor's vanity. He was left co-heir with Gemellus, grandson to Tiberius; but they set aside the nomination, and declared Caligula sole successor to the empire. The joy for this election was not confined to the narrow bounds of Italy; it spread through the whole empire, and victims without number were sacrificed upon the occasion. Some of the people, upon his going into the island of Campania, made vows for his return; and shortly after, when he fell sick, the multitudes crowded whole nights round his palace, and some even devoted themselves to death in case he recovered, setting up bills of their resolutions in the streets. In this affection of the citizens, strangers themselves seemed ambitious of sharing. Artabanus, king of Parthia, sought the emperor's alliance with assiduity. He came to a personal conference with one of his legates; passed the Euphrates, adored the Roman eagles, and kissed the emperor's images; so that the whole world seemed combined to praise him for virtues which they supposed him to possess.

282 Caligula begins to reign well. The new emperor at first seemed extremely careful of the public favour; and having performed the funeral solemnities of Tiberius, he hastened to the islands of Pandataria and Pontia, to remove the ashes of his mother and brothers, exposing himself to the dangers of tempestuous weather, to give a lustre to his piety. Having brought them to Rome, he instituted annual solemnities in their honour, and ordered the month of September to be called *Germanicus*, in memory of his father. These ceremonies being over, he conferred the same honours upon his grandmother Antonia, which had before been given to Livia; and ordered all informations to be burnt, that any ways exposed the enemies of his family. He even refused a paper that was offered him, tending to the discovery of a conspiracy against him; alleging, That he was conscious of nothing to deserve any man's hatred, and therefore had no fears from their machinations. He caused the institutions of Augustus, which had been disused in the reign of Tiberius, to be revived; undertook to reform many abuses in the state, and severely punished corrupt governors. Among others, he banished Pontius Pilate into Gaul, where this unjust magistrate afterwards put an end to his life by suicide. He banished the spintriæ,

Rome. ...ed to ſubmit to ſuch miſerable exactions, from Rome; attempted to revive the ancient manner of electing magiſtrates by the free votes of the people; and gave them a free adminiſtration, without any appeal to himſelf. Although the will of Tiberius was controlled by the ſenate, and that of Livia oppoſed by Tiberius, yet he cauſed all their orders to be punctually paid; and in order to make Germanicus appear the more the darling of the crowd, he cauſed him to be called Princeps Juventutis, or principal of the youth. He reſtored ſome kings to their dominions which had been unjuſtly uſurped by Tiberius, and gave them the arrears of their revenues. And, that he might appear an encourager of every virtue, he ordered a female slave a large ſum of money for enduring the moſt exquiſite tortments without diſcovering the ſecrets of her maſter. So many exceſſive and ſuch apparent virtues, could not fail of receiving due applauſe. A ſhield of gold, bearing his image, was ordered to be carried annually to the Capitol, attended by the ſenate and the flower of the nobility ſinging in praiſe of the emperor's virtues. It was likewiſe ordained, that the day on which he was appointed to the empire ſhould be called *Palilia*; implying, that when he came to govern, the city received a new foundation.

...ſs;
...ecame a
...moſt ſud-
...ſuppoſed by
...rait.

In leſs than eight months all this ſhew of moderation and clemency vaniſhed; while furious paſſions, unexampled avarice, and capricious cruelty, began to take their turn in his mind. As moſt of the cruelties of Tiberius aroſe from ſuſpicion, ſo moſt of thoſe committed by Caligula took riſe from prodigality. Some indeed aſſert, that a diſorder which happened ſoon after his acceſſion to the empire, entirely diſcompoſed his underſtanding. However this may be, madneſs itſelf could ſcarce dictate cruelties more extravagant, or inconſiſtencies more ridiculous, than are imputed to him; ſome of them appear almoſt beyond belief, as they ſeem entirely without any motive to incite ſuch barbarities.

The firſt object of his cruelty was a perſon named *Pastor*, who had devoted himſelf to death, in caſe the emperor, who was then ſick, ſhould recover. When Caligula's health was re-eſtabliſhed, he was informed of the zeal of Paſtor, and actually compelled him to complete his vow. This ridiculous devotee was therefore led round the city, by children, adorned with chaplets, and then put to death, being thrown headlong from the ramparts. Another, named *Secundus*, had vowed to fight in the amphitheatre upon the ſame occaſion. To this he was alſo compelled, the emperor himſelf chooſing to be a ſpectator of the combat. However, he was more fortunate than the former, being ſo ſucceſsful as to kill his adverſary, by which he obtained a releaſe from his vow. Gemellus was the next who ſuffered from the tyrant's inhumanity. The pretence againſt him was, that he had wiſhed the emperor might not recover, and that he had taken a certain poiſon to ſecure him from any ſecret attempts againſt his life. Caligula ordered him to kill himſelf; but as the unfortunate youth was ignorant of the manner of doing it, the emperor's meſſengers ſoon inſtructed him in the fatal leſſon. Silenus, the emperor's father in-law, was the next that was put to death upon ſlight ſuſpicions; and Gercinus, a ſenator of noted integrity, refuſing to witneſs falſely againſt him, ſhared his fate. After theſe followed a crowd of victims to the emperor's avarice or ſuſpicion. The pretext againſt them was their enmity to his family; and in proof of his accuſations he produced thoſe very memorials which but a while before he pretended to have burnt. Among the number of thoſe who were ſacrificed to his jealouſy, was Macro, the late favourite of Tiberius, and the perſon to whom Caligula owed his empire. He was accuſed of many crimes, ſome of which were common to the emperor as well as to him, and his death brought on the ruin of his whole family. Rome.

Theſe cruelties, however, only ſeemed the firſt fruits of a mind naturally timid and ſuſpicious: his vanity and profuſion ſoon gave riſe to others which were more atrocious, as they ſprung from leſs powerful motives. His pride firſt began by aſſuming to himſelf the title of *ruler*, which was uſually granted only to kings. He would alſo have taken the crown and diadem, had he not been adviſed that he was already ſuperior to all the monarchs of the world. Not long after, he aſſumed divine honours, and gave himſelf the names of ſuch divinities as he thought moſt agreeable to his nature. For this purpoſe he cauſed the heads of the ſtatues of Jupiter and ſome other gods to be ſtruck off, and his own to be put in their places. He frequently ſeated himſelf between Caſtor and Pollux, and ordered all who came to their temple to worſhip, ſhould pay their adorations only to him; nay, at laſt he altered their temple to the form of a portico, which he joined to his palace, that the very gods, as he ſaid, might ſerve him in the quality of porters.

He was not leſs notorious for the depravation of his appetites than for his ridiculous preſumptions. Neither perſon, place, nor ſex, were obſtacles to the indulgence of his unnatural luſts. There was ſcarce a lady of any quality in Rome that eſcaped his lewdneſs; and, indeed, ſuch was the degeneracy of the times, that there were few ladies who did not think this diſgrace an honour. He committed inceſt with his three ſiſters, and at public feaſts they lay with their heads upon his boſom by turns. Of theſe he proſtituted Livia and Agrippina to his vile companions, and then baniſhed them as adulteſſes and conſpirators againſt his perſon. As for Druſilla, he took her from her huſband Longinus, and kept her as his wife. Her he loved ſo affectionately, that, being ſick, he appointed her as heireſs of his empire and fortune; and ſhe happening to die before him, he made her a goddeſs. Nor did her example when living, appear more dangerous to the people than her divinity when dead. To mourn for her death was a crime, as ſhe was become a goddeſs; and to rejoice for her divinity was capital, becauſe ſhe was dead. Nay, even ſilence itſelf was an unpardonable inſenſibility, either of the emperor's loſs or his ſiſter's advancement. Thus he made his ſiſter ſubſervient to his profit, as before he had done to his pleaſure; raiſing vaſt ſums of money by granting pardons to ſome, and by confiſcating the goods of others. As to his marriages, whether he contracted them with greater levity, or diſſolved them with greater injuſtice, is not eaſy to determine. Being preſent at the nuptials of Livia Oreſtilla with Piſo, as ſoon as the ſolemnity was over, he commanded her to be brought to him as his own wife, and then diſmiſſed her in a few days. He ſoon after baniſhed her upon ſuſpicion of cohabiting with her huſband after ſhe was parted from him. He was enamoured of Lollio Paulina, upon a bare relation of her grandmother's

Rome. mother's beauty; and thereupon took her from her husband, who commanded in Macedonia: notwithſtanding which, he repudiated her as he had done the former, and likewiſe forbad her future marrying with any other. The wife who caught moſt firmly upon his affections was Milonia Cæſonia, whoſe chief merit lay in her perfect acquaintance with all the alluring arts of her ſex, for ſhe was otherwiſe poſſeſſed neither of youth nor beauty. She continued with him during his reign; and he loved her ſo ridiculouſly, that he ſometimes ſhowed her to his ſoldiers dreſſed in armour, and ſometimes to his companions ſtark naked.

But of all his vices, his prodigality was the moſt remarkable, and that which in ſome meaſure gave riſe to the reſt. The luxuries of former emperors were ſimplicity itſelf, when compared to thoſe which he practiſed. He contrived new ways of bathing, where the richeſt oils and moſt precious perfumes were exhauſted with the utmoſt profuſion. He found out diſhes of immenſe value; and had even jewels, as we are told, diſſolved among his ſauces. He ſometimes had ſervices of pure gold preſented before his gueſts inſtead of meat; obſerving, that a man ſhould be an œconomiſt or an emperor.

For ſeveral days together he flung conſiderable ſums of money among the people. He ordered ſhips of a prodigious bulk to be built of cedar, the ſtems of ivory inlaid with gold and jewels, the ſails and tackling of various ſilks, while the decks were planted with the choiceſt fruit trees, under the ſhade of which he often dined. Here, attended by all the miniſters of his pleaſures, the moſt exquiſite ſingers, and the moſt beautiful youths, he coaſted along the ſhore of Campania with great ſplendor. All his buildings ſeemed rather calculated to raiſe aſtoniſhment, than to anſwer the purpoſes of utility. But the moſt notorious inſtance of his fruitleſs profuſion was the vaſt bridge at Puteoli, which he undertook in the third year of his reign. To ſatisfy his deſire of being maſter as well of the ocean as the land, he cauſed an infinite number of ſhips to be faſtened to each other, ſo as to make a floating bridge from Baiæ to Puteoli, acroſs an arm of the ſea three miles and an half broad. The ſhips being placed in two rows, in form of a creſcent, were ſecured to each other with anchors, chains, and cables. Over theſe were laid vaſt quantities of timber, and upon that earth, ſo as to make the whole reſemble one of the ſtreets of Rome. He next cauſed ſeveral houſes to be built upon his new bridge, for the reception of himſelf and his attendants, into which freſh water was conveyed by pipes from land. He then repaired thither with all his court, attended by prodigious throngs of people, who came from all parts to be ſpectators of ſuch an expenſive pageant. It was there that Caligula, adorned with all the magnificence of eaſtern royalty, ſitting on horſeback, with a civic crown and Alexander's breaſt-plate, attended by the great officers of the army, and all the nobility of Rome, entered at one end of the bridge, and with ridiculous importance rode to the other. At night, the number of torches and other illuminations with which this expenſive ſtructure was adorned, caſt ſuch a gleam as illuminated the whole bay, and all the neighbouring mountains. This ſeemed to give the weak emperor new cauſe for exultation; boaſting that he had turned night into day, as well as ſea into land. The next morning he again rode over in a triumphant chariot, followed by a numerous train of charioteers, and all his ſoldiers in glittering armour. He then aſcended a roſtrum erected for the occaſion, where he made a ſolemn oration in praiſe of the greatneſs of his enterpriſe, and the aſſiduity of his workmen and his army. He then diſtributed rewards among his men, and a ſplendid feaſt ſucceeded. In the midſt of the entertainment many of his attendants were thrown into the ſea; ſeveral ſhips filled with ſpectators were attacked and ſunk in an hoſtile manner; and although the majority eſcaped through the calmneſs of the weather, yet many were drowned; and ſome who endeavoured to ſave themſelves by climbing to the bridge, were ſtruck down again by the emperor's command. The calmneſs of the ſea during this pageant, which continued for two days, furniſhed Caligula with freſh opportunities for boaſting; being heard to ſay, "that Neptune took care to keep the ſea ſmooth and ſerene, merely out of reverence to him." Rome.

Expences like theſe, it may be naturally ſuppoſed, muſt have exhauſted the moſt unbounded wealth: in fact, after reigning about a year, Caligula found his revenues totally exhauſted; and a fortune of about 18,000,000 of our money, which Tiberius had amaſſed together, entirely ſpent in extravagance and folly. Now, therefore, his prodigality put him upon new methods of ſupplying the exchequer; and as before his profuſion, ſo now his rapacity became boundleſs. He put in practice all kinds of rapine and extortion; while his principal ſtudy ſeemed to be the inventing new impoſts and illicit confiſcations. Every thing was taxed, to the very wages of the meaneſt tradeſman. He cauſed freemen to purchaſe their freedom a ſecond time; and poiſoned many who had named him for their heir, to have the immediate poſſeſſion of their fortunes. He ſet up a brothel in his own palace, by which he gained conſiderable ſums by all the methods of proſtitution. He alſo kept a gaming-houſe, in which he himſelf preſided, ſcrupling none of the meaneſt tricks in order to advance his gains. On a certain occaſion having had a run of ill luck, he ſaw two rich knights paſſing through his court; upon which he ſuddenly roſe up, and cauſing both to be apprehended, confiſcated their eſtates, and then joining his former companions, boaſted that he never had a better throw in his life. Another time, wanting money for a ſtake, he went down and cauſed ſeveral noblemen to be put to death; and then returning, told the company that they ſat playing for trifles while he had won 60,000 ſeſterces at a caſt.

284 Ridiculous expeditions againſt Britain and Germany.

Such inſupportable and capricious cruelties produced many ſecret conſpiracies againſt him; but theſe were for a while deferred, upon account of his intended expedition againſt the Germans and Britons, which he undertook in the third year of his reign. For this purpoſe, he cauſed numerous levies to be made in all parts of the empire; and talked with ſo much reſolution, that it was univerſally believed he would conquer all before him. His march perfectly indicated the inequality of his temper: ſometimes it was ſo rapid, that the cohorts were obliged to leave their ſtandards behind them; at other times it was ſo ſlow, that it more reſembled a pompous proceſſion than a military expedition. In this diſpoſition he would cauſe himſelf to be carried on eight men's ſhoulders, and order all the neighbouring

Rome.

...ral hundred cities to have their ſtreets well ſwept and ... to defend him from the dirt. However, all ... preparations ended in nothing. Instead ... Britain, he only gave orders to collect ... ſhells; and this he declared in a letter ... the ſenate, as taking poſſeſſion of the whole coaſt. ... Caligula, inſtead of conducting Germany, led his army ... the ſhores of Britain. ... and having ... ſhells that he ſpoke of into their helmets, ... down the walls of the emperor's tents, ... of the ocean and the deep. After this doughty ex... ing his army together as a general after ... victory, he harangued them in a pompous manner, ... highly extolled their achievements; and then diſ... tributing money among them, diſmiſſed them with or... ders to be joyful, and congratulated them upon their ... riches. But that ſuch exploits ſhould not paſs without ... a memorial, he cauſed a lofty tower to be erected by ... the ſea-ſide; and ordered the galleys in which he had ... put to ſea to be conveyed to Rome in a great meaſure ... by land.

... Marcus ... ius.

After numberleſs inſtances of folly and cruelty in this expedition, among which he had intentions of deſtroying the whole army that had formerly mutinied under his father Germanicus, he began to think of a triumph. The ſenate, who had long been the timid miniſters of his pride and cruelty, immediately ſet about conſulting how to ſatisfy his expectations. They conſidered that a triumph would, even to himſelf, appear as a burleſque upon his expedition: they therefore decreed him only an ovation. Having come to this reſolution, they ſent him a deputation, informing him of the honours granted him, and the decree, which was drawn up in terms of the moſt extravagant adulation. However, their flattery was far from ſatisfying his pride. He conſidered their conduct rather as a diminution of his power, than an addition to his glory. He therefore ordered them, on pain of death, not to concern themſelves with his honours; and being met by their meſſengers on the way, who invited him to come and partake of the preparations which the ſenate had decreed, he informed them that he would come; and then laying his hand upon his ſword, added, that he would bring that alſo with him. In this manner, either quite omitting his triumph, or deferring it to another time, he entered the city with only an ovation; while the ſenate paſſed the whole day in acclamations in his praiſe, and ſpeeches filled with the moſt exceſſive flattery. This conduct in ſome meaſure ſerved to reconcile him, and ſoon after their exceſſive zeal in his cauſe entirely gained his favour. For it happened that Protogenes, who was one of the moſt intimate and the moſt cruel of his favourites, coming into the houſe, was fawned upon by the whole body of the ſenate, and particularly by Proculus. Whereupon Protogenes with a fierce look, aſked how one who was ſuch an enemy to the emperor could be ſuch a friend to him? There needed no more to excite the ſenate againſt Proculus. They inſtantly ſeized upon him, and violently tore him in pieces; plainly ſhowing by their conduct, that tyranny in a prince produces cruelty in thoſe whom he governs.—It was after returning from this extravagant expedition, that he was waited upon by a deputation of the Jews of Alexandria, who came to deprecate his anger for not worſhipping his divinity as other nations had done. The emperor gave them a very ungracious reception, and would probably have deſtroyed their countrymen in Italy alſo, had not he himſelf been ſoon after cut off.

The affairs of the Jews remained undecided during his reign; but it was at laſt left to be determined by his ſucceſſor to their ſatisfaction. It was upon this occaſion that Philo made the following remarkable anſwer to ſome aſſociates, who were terrified with apprehenſions of the emperor's diſpoſition; "Fear nothing (cried he to them), Caligula, by declaring againſt us, puts God on our ſide."

The continuation of this horrid reign ſeemed to threaten univerſal calamity: however, it was but ſhort. 286 A conſpiracy formed againſt the emperor, There had already been ſeveral conſpiracies formed to deſtroy the tyrant, but without ſucceſs. That which at laſt ſucceeded in delivering the world of this monſter, was concerted under the influence of Callus Cherea, tribune of the prætorian bands. This was a man of experienced courage, an ardent admirer of freedom, and conſequently an enemy to tyrants. Beſides the motives which he had in common with other men, he had received repeated inſults from Caligula, who took all occaſions of turning him into ridicule, and impeaching him of cowardice, merely becauſe he had an effeminate voice. Whenever Cherea came to demand the watch-word from the emperor, according to cuſtom, he always gave him either Venus, Adonis, or ſome ſuch, implying effeminacy and ſoftneſs. He therefore ſecretly imparted his deſigns to ſeveral ſenators and knights, whom he knew to have received perſonal injuries from Caligula, or to be apprehenſive of thoſe to come. Among theſe was Valerius Aſiaticus, whoſe wife the emperor had debauched. Annius Vincianus, who was ſuſpected of having been in a former conſpiracy, was now deſirous of really engaging in the firſt deſign that offered. Beſides theſe, were Clemens the prefect; and Caliſtus, whoſe riches made him obnoxious to the tyrant's reſentment.

While theſe were deliberating upon the moſt certain and ſpeedy method of deſtroying the tyrant, an unexpected incident gave new ſtrength to the conſpiracy. Pompedius, a ſenator of diſtinction, having been accuſed before the emperor, of having ſpoken of him with diſreſpect, the informer cited one Quintilia, an actreſs, to confirm his accuſation. Quintilia, however, was poſſeſſed of a degree of fortitude not eaſily found. She denied the fact with obſtinacy; and being put to the torture at the informer's requeſt, ſhe bore the ſevereſt torments of the rack with unſhaken conſtancy. But what is moſt remarkable of her reſolution is, that ſhe was acquainted with all the particulars of the conſpiracy; and although Cherea was appointed to preſide at her torture, ſhe revealed nothing: on the contrary, when ſhe was led to the rack, ſhe trod upon the toe of one of the conſpirators, intimating at once her knowledge of the confederacy, and her own reſolution not to divulge it. In this manner ſhe ſuffered until all her limbs were diſlocated; and in that deplorable ſtate was preſented to the emperor, who ordered her a gratuity for what ſhe had ſuffered. Cherea could now no longer

Rome. ger contain his indignation at being thus made the inſtrument of a tyrant's cruelty. He therefore propoſed to the conſpirators to attack him as he went to offer ſacrifices in the Capitol, or while he was employed in the ſecret pleaſures of the palace. The reſt, however, were of opinion, that it was beſt to fall upon him when he ſhould be unattended; by which means they would be more certain of ſucceſs. After ſeveral deliberations, it was at laſt reſolved to attack him during the continuance of the Palatine games, which laſted four days; and to ſtrike the blow when his guards ſhould have the leaſt opportunity to defend him. In conſequence of this, the three firſt days of the games paſſed without affording that opportunity which was ſo ardently deſired. Cherea now, therefore, began to apprehend, that deferring the time of the conſpiracy might be a mean to divulge it: he even began to dread, that the honour of killing the tyrant might fall to the lot of ſome other perſon more bold than himſelf. Wherefore, he at laſt reſolved to defer the execution of his plot only to the day following, when Caligula ſhould paſs through a private gallery, to ſome baths not far diſtant from the palace.

287 Who is murdered.

The laſt day of the games was more ſplendid than the reſt; and Caligula ſeemed more ſprightly and condeſcending than uſual. He took great amuſement in ſeeing the people ſcramble for the fruits and other rarities thrown by his order among them; and ſeemed no way apprehenſive of the plot formed for his deſtruction. In the mean time, the conſpiracy began to tranſpire; and had he poſſeſſed any friends, it could not have failed of being diſcovered. The conſpirators waited a great part of the day with the moſt extreme anxiety; and at one time Caligula ſeemed reſolved to ſpend the whole day without any refreſhment. This unexpected delay entirely exaſperated Cherea; and had he not been reſtrained, he would have gone and perpetrated his deſign in the midſt of all the people. Juſt at this inſtant, while he was yet heſitating what he ſhould do, Aſprenas, one of the conſpirators, perſuaded Caligula to go to the bath and take ſome ſlight refreſhment, in order to enjoy the reſt of the entertainment with greater reliſh. The emperor therefore riſing up, the conſpirators uſed every precaution to keep off the throng, and to ſurround him, under pretence of greater aſſiduity. Upon entering into the little vaulted gallery that led to the bath, he was met by a band of Grecian children who had been inſtructed in ſinging, and were come to perform in his preſence. He was once more therefore going to return into the theatre with them, had not the leader of the band excuſed himſelf, as having a cold. This was the moment that Cherea ſeized to ſtrike him to the ground; crying out, "Tyrant, think upon this." Immediately after, the other conſpirators ruſhed in; and while the emperor continued to reſiſt, crying out, that he was not yet dead, they diſpatched him with 30 wounds, in the 29th year of his age, after a ſhort reign of three years ten months and eight days. With him, his wife and infant daughter alſo periſhed; the one being ſtabbed by a centurion, the other having its brains dashed out against the wall. His coin was alſo melted down by a decree of the ſenate; and ſuch precautions were taken, that all ſeemed willing, that neither his features nor his name might be tranſmitted to poſterity.

As ſoon as the death of Caligula was made public, it produced the greateſt confuſion in all parts of the city. The conſpirators, who only aimed at deſtroying a tyrant without attending to a ſucceſſion, had all ſought ſafety by retiring to private places. Some thought the report of the emperor's death was only an artifice of his own, to ſee how his enemies would behave. Others averred that he was ſtill alive, and actually in a fair way to recover. In this interval of ſuſpenſe, the German guards finding it a convenient time to pillage, gave a looſe to their licentiouſneſs, under a pretence of revenging the emperor's death. All the conſpirators and ſenators that fell in their way received no mercy: Aſprenas, Norbanus, and Anteius, were cut in pieces. However, they grew calm by degrees, and the ſenate was permitted to aſſemble, in order to deliberate upon what was neceſſary to be done in the preſent emergency. Rome. 288 Great confuſion enſues on his death.

In this deliberation, Saturninus, who was then conſul, inſiſted much upon the benefits of liberty; and talked in raptures of Cherea's fortitude, alleging that it deſerved the higheſt reward. This was a language highly pleaſing to the ſenate. Liberty now became the favourite topic; and they even ventured to talk of extinguiſhing the very name of Cæſar. Impreſſed with this reſolution, they brought over ſome cohorts of the city to their ſide, and boldly ſeized upon the Capitol. But it was now too late for Rome to regain her priſtine freedom; the populace and the army oppoſing their endeavours. The former were ſtill mindful of their ancient hatred to the ſenate, and remembered the donations and public ſpectacles of the emperors with regret. The latter were ſenſible they could have no power but in a monarchy; and had ſome hopes that the election of the emperor would fall to their determination. In this oppoſition of intereſts, and variety of opinions, chance ſeemed at laſt to decide the fate of the empire. Some ſoldiers happening to run about the palace, diſcovered Claudius, Caligula's uncle, lurking in a ſecret place, where he had hid himſelf through fear. Of this perſonage, who had hitherto been deſpiſed for his imbecillity, they reſolved to make an emperor: and accordingly carried him upon their ſhoulders to the camp, where they proclaimed him at a time he expected nothing but death.

289 Claudius made emperor.

The ſenate now, therefore, perceiving that force alone was likely to ſettle the ſucceſſion, were reſolved to ſubmit, ſince they had no power to oppoſe. Claudius was the perſon moſt nearly allied to the late emperor, then living; being the nephew of Tiberius, and the uncle of Caligula. The ſenate therefore paſſed a decree, confirming him in the empire; and went ſoon after in a body, to render him their compulſive homage. Cherea was the firſt who fell a ſacrifice to the jealouſy of this new monarch. He met death with all the fortitude of an ancient Roman; deſiring to die by the ſame ſword with which he had killed Caligula. Lupus, his friend, was put to death with him; and Sabinus, one of the conſpirators, laid violent hands on himſelf.

Claudius was 50 years old when he began to reign. The complicated diſeaſes of his infancy had in ſome meaſure affected all the faculties both of his body and mind. He was continued in a ſtate of pupillage much longer than was uſual at that time; and ſeemed, in

every

[illegible] part of his life incapable of conducting himself. Not that he was entirely destitute of understanding, [illegible] he had made a tolerable proficiency in the Greek and Latin languages, and even wrote in history of his own time; which, however destitute of other merit, was not contemptible in point of style. Nevertheless, with this share of erudition, he was unable to advance himself in the state, and seemed utterly neglected until he was placed all at once at the head of affairs.

293 His happy [illegible]tion in the [illegible]

The commencement of his reign gave the most promising hopes of an happy continuance. He began by passing an act of oblivion for all former words and actions, and disannulled all the cruel edicts of Caligula. He forbade all persons, upon severe penalties, to sacrifice to him as they had done to Caligula; was assiduous in hearing and examining complaints; and frequently administered justice in person; tempering by his mildness the severity of the law. We are told of his bringing a woman to acknowledge her son, by adjudging her to marry him. The tribunes of the people coming one day to attend him when he was on his tribunal, he courteously excused himself for not having room for them to sit down. By this deportment he so much gained the affections of the people, that upon a vague report of his being slain by surprise, they ran about the streets in the utmost rage and consternation, with horrid imprecations against all such as were accessary to his death; nor could they be appeased, until they were assured, with certainty, of his safety. He took a more than ordinary care that Rome should be continually supplied with corn and provisions, securing the merchants against pirates. He was not less assiduous in his buildings, in which he excelled almost all that went before him. He constructed a wonderful aquæduct, called after his own name, much surpassing any other in Rome, either for workmanship or plentiful supply. It brought water from 40 miles distance, through great mountains, and over deep valleys; being built on stately arches, and furnishing the highest parts of the city. He made also an haven at Ostia; a work of such immense expence, that his successors were unable to maintain it. But his greatest work of all was the draining of the lake Fucinus, which was the largest in Italy, and bringing its water into the Tiber, in order to strengthen the current of that river. For effecting this, among other vast difficulties, he mined through a mountain of stone three miles broad, and kept 30,000 men employed for 11 years together.

To this solicitude for the internal advantages of the state, he added that of a watchful guardianship over the provinces. He restored Judea to Herod Agrippa, which Caligula had taken from Herod Antipas, his uncle, the man who had put John the Baptist to death, and who was banished by order of the present emperor. Claudius also restored such princes to their kingdoms as had been [illegible] dispossessed by his predecessors; but deprived the Lycians and Rhodians of their liberty, for having promoted insurrections, and crucified some citizens of Rome.

291 His expedition against Britain.

He even undertook to gratify the people by foreign conquest. The Britons, who had, for near 100 years, been left in the possession of their own island, began to seek the mediation of Rome, to quell their intestine commotions. The principal man who desired to subject his native country to the Roman dominion, was one Bericus, who, by many arguments, persuaded the emperor to make a descent upon the island, magnifying the advantages that would attend the conquest of it. In pursuance of his advice, therefore, Plautius the prætor was ordered to pass over into Gaul, and make preparations for this great expedition. At first, indeed, his soldiers seemed backward to embark; declaring, that they were unwilling to make war beyond the limits of the world, for so they judged Britain to be. However, they were at last persuaded to go; and the Britons, under the conduct of their king Cynobelinus, were several times overthrown. And these successes soon after induced Claudius to go into Britain in person, upon pretence that the natives were still seditious, and had not delivered up some Roman fugitives who had taken shelter among them; but for a particular account of the exploits of the Romans in that island, see the article ENGLAND.

Rome.

292 Is induced by his favourites to commit many acts of cruelty.

But though Claudius gave in the beginning of his reign the highest hopes of an happy continuance, he soon began to lessen his care for the public, and to commit to his favourites all the concerns of the empire. This weak prince was unable to act but under the direction of others. The chief of his directors was his wife Messalina: whose name is almost become a common appellation to women of abandoned characters. However, she was not less remarkable for her cruelties than her lusts; as by her intrigues she destroyed many of the most illustrious families of Rome. Subordinate to her were the emperor's freedmen; Pallas, the treasurer; Narcissus, the secretary of state; and Callistus, the master of the requests. These entirely governed Claudius; so that he was only left the fatigues of ceremony, while they were possessed of all the power of the state.

It would be tedious to enumerate the various cruelties which these insidious advisers obliged the feeble emperor to commit: those against his own family will suffice. Appius Silanus, a person of great merit, who had been married to the emperor's mother-in-law, was put to death upon the suggestions of Messalina. After him he slew both his sons-in-law, Silanus and Pompey, and his two nieces the Livias, one the daughter of Drusus, the other of Germanicus; and all without permitting them to plead in their defence, or even without assigning any cause for his displeasure. Great numbers of others fell a sacrifice to the jealousy of Messalina and her minions; who bore so great a sway in the state, that all offices, dignities, and governments, were entirely at their disposal. Every thing was put to sale: they took money for pardons and penalties; and accumulated, by these means, such vast sums, that the wealth of Crœsus was considered as nothing in comparison. One day, the emperor complaining that his exchequer was exhausted, he was ludicrously told, that it might be sufficiently replenished if his two freedmen would take him into partnership. Still, however, during such corruption, he regarded his favourites with the highest esteem, and even solicited the senate to grant them peculiar marks of their approbation. These disorders in the ministers of government did not fail to produce conspiracies against the emperor. Statius Corvinus and Gallus Assinius formed a conspiracy against him. Two knights, whose names are not told us, privately combined to assassinate him. But the revolt which

Rome. which gave him the greateſt uneaſineſs, and which was puniſhed with the moſt unrelenting ſeverity, was that of Camillus, his lieutenant-general in Dalmatia. This general, incited by many of the principal men of Rome, openly rebelled againſt him, and aſſumed the title of *emperor*. Nothing could exceed the terrors of Claudius, upon being informed of this revolt: his nature and his crimes had diſpoſed him to be more cowardly than the reſt of mankind; ſo that when Camillus commanded him by letters to relinquiſh the empire, and retire to a private ſtation, he ſeemed inclined to obey. However, his fears upon this occaſion were ſoon removed: for the legions which had declared for Camillus being terrified by ſome prodigies, ſhortly after abandoned him; ſo that the man whom but five days before they had acknowledged as emperor, they now thought it no infamy to deſtroy. The cruelty of Meſſalina and her minions upon this occaſion ſeemed to have no bounds. They ſo wrought upon the emperor's fears and ſuſpicions, that numbers were executed without trial or proof; and ſcarce any, even of thoſe who were but ſuſpected, eſcaped, unleſs by ranſoming their lives with their fortunes.

293 Their infamous conduct.

By ſuch cruelties as theſe, the favourites of the emperor endeavoured to eſtabliſh his and their own authority: but in order to increaſe the neceſſity of their aſſiſtance, they laboured to augment the greatneſs of his terrors. He now became a prey to jealouſy and diſquietude. Being one day in the temple, and finding a ſword that was left there by accident, he convened the ſenate in a fright, and informed them of his danger. After this he never ventured to go to any feaſt without being ſurrounded by his guards, nor would he ſuffer any man to approach him without a previous ſearch. Thus wholly employed by his anxiety for ſelf-preſervation, he entirely left the care of the ſtate to his favourites, who by degrees gave him a reliſh for ſlaughter. From this time he ſeemed delighted with inflicting tortures; and on a certain occaſion continued a whole day at the city of Tibur, waiting for an hangman from Rome, that he might feaſt his eyes with an execution in the manner of the ancients. Nor was he leſs regardleſs of the perſons he condemned, than cruel in the infliction of their puniſhment. Such was his extreme ſtupidity, that he would frequently invite thoſe to ſupper whom he had put to death but the day before; and often denied the having given orders for an execution, but a few hours after pronouncing ſentence. Suetonius aſſures us, that there were no leſs than 35 ſenators, and above 300 knights, executed in his reign; and that ſuch was his unconcern in the midſt of ſlaughter, that one of the tribunes bringing him an account of a certain ſenator who was executed, he quite forgot his offence, but calmly acquieſced in his puniſhment.

294 Extravagant lewdneſs of the empreſs Meſſalina.

In this manner was Claudius urged on by Meſſalina to commit cruelties, which he conſidered only as wholeſome ſeverities; while, in the mean time, ſhe put no bounds to her enormities. The impunity of her paſt vices only increaſing her confidence to commit new, her debaucheries became every day more notorious, and her lewdneſs exceeded what had ever been ſeen at Rome. She cauſed ſome women of the firſt quality to commit adultery in the preſence of their huſbands, and deſtroyed ſuch as refuſed to comply. After appearing for ſome years inſatiable in her deſires, ſhe at length fixed her affections upon Caius Silius, the moſt beautiful youth in Rome. Her love for the young Roman ſeemed to amount even to madneſs. She obliged him to divorce his wife Junia Syllana, that ſhe might entirely poſſeſs him herſelf. She obliged him to accept of immenſe treaſures and valuable preſents; cohabiting with him in the moſt open manner, and treating him with the moſt ſhameleſs familiarity. The very imperial ornaments were transferred to his houſe; and the emperor's ſlaves and attendants had orders to wait upon the adulterer. Nothing was wanting to complete the inſolence of their conduct, but their being married together; and this was ſoon after effected. They relied upon the emperor's imbecility for their ſecurity, and only waited till he retired to Oſtia to put their ill-judged project in execution. In his abſence, they celebrated their nuptials with all the ceremonies and ſplendor which attend the moſt confident ſecurity. Meſſalina gave a looſe to her paſſion, and appeared as a Bacchanalian with a thyrſus in her hand; while Silius aſſumed the character of Bacchus, his body being adorned with robes imitating ivy, and his legs covered with buſkins. A troop of ſingers and dancers attended, who heightened the revel with the moſt laſcivious ſongs and the moſt indecent attitudes. In the midſt of this riot, one Valens, a buffoon, is ſaid to have climbed a tree; and being demanded what he ſaw, anſwered that he perceived a dreadful ſtorm coming from Oſtia. What this fellow ſpoke at random was actually at that time in preparation. It ſeems that ſome time before there had been a quarrel between Meſſalina and Narciſſus, the emperor's firſt freedman. This ſubtle miniſter therefore deſired nothing more than an opportunity of ruining the empreſs, and he judged this to be a moſt favourable occaſion. He firſt made the diſcovery by means of two concubines who attended the emperor, who were inſtructed to inform him of Meſſalina's marriage as the news of the day, while Narciſſus himſelf ſtepped in to confirm their information. Finding it operated upon the emperor's fears as he could wiſh, he reſolved to alarm him ſtill more by a diſcovery of all Meſſalina's projects and attempts. He aggravated the danger, and urged the expediency of ſpeedily puniſhing the delinquents. Claudius, quite terrified at ſo unexpected a relation, ſuppoſed the enemy were already at his gates; and frequently interrupted his freedman, by aſking if he was ſtill maſter of the empire. Being aſſured that he yet had it in his power to continue ſo, he reſolved to go and puniſh the affront offered to his dignity without delay. Nothing could exceed the conſternation of Meſſalina and her thoughtleſs companions, upon being informed that the emperor was coming to diſturb their feſtivity. Every one retired in the utmoſt confuſion. Silius was taken. Meſſalina took ſhelter in ſome gardens which ſhe had lately ſeized upon, having expelled Aſiaticus the true owner, and put him to death. From thence ſhe ſent Brittanicus, her only ſon by the emperor, with Octavia her daughter, to intercede for her, and implore his mercy. She ſoon after followed them herſelf; but Narciſſus had ſo fortified the emperor againſt her arts, and contrived ſuch methods of diverting his attention from her defence, that ſhe was obliged to return in deſpair. Narciſſus being thus far ſucceſsful, led Claudius to

[illegible] the adulterer, there showing him the apartments adorned with the spoils of his own palace; and then conducting him to the prætorian camp, revived his courage by giving him assurances of the readiness of the soldiers to defend him. Having thus artfully wrought upon his fears and resentment, the wretched [illegible] was commanded to appear; who, making no defence, was [illegible] put to death in the emperor's presence. Several others shared the same fate; but Messalina still flattered herself with the hopes of pardon. She resolved to leave neither prayers nor tears unattempted to appease the emperor. She sometimes even gave a loose to her resentment, and threatened her accusers with vengeance. Nor did she want ground for entertaining the most favourable expectations. Claudius having returned from the execution of her paramour, and having allayed his resentment in a banquet, began to relent. He now therefore commanded his attendants to apprise that miserable creature, meaning Messalina, of his resolution to hear her accusation the next day, and ordered her to be in readiness with her defence. The permission to defend herself would have been fatal to Narcissus; wherefore he rushed out, and ordered the tribunes and centurions who were in readiness to execute her immediately by the emperor's command. Claudius was informed of her death in the midst of his banquet: but this insensible idiot showed not the least appearance of emotion. He continued at table with his usual tranquillity; and the day following, while he was sitting at dinner, he asked why Messalina was absent, as if he had totally forgotten her crimes and her punishment.

295 She is put to death.

Claudius being now a widower, declared publicly, that as he had hitherto been unfortunate in his marriages, he would remain single for the future, and that he would be contented to forfeit his life in case he broke his resolution. However, the resolutions of Claudius were but of short continuance. Having been accustomed to live under the controul of women, his present freedom was become irksome to him, and he was entirely unable to live without a director. His freedmen therefore perceiving his inclinations, resolved to procure him another wife; and, after some deliberation they fixed upon Agrippina, the daughter of his brother Germanicus. This woman was more practised in vice than even the former empress. Her cruelties were more dangerous, as they were directed with greater caution: she had poisoned her former husband, to be at liberty to attend the calls of ambition; and, perfectly acquainted with all the infirmities of Claudius, only made use of his power to advance her own. However, as the late declaration of Claudius seemed to be an obstacle to his marrying again, persons were suborned to move in the senate, that he should be compelled to take a wife, as a matter of great importance to the commonwealth; and some more determined flatterers than the rest left the house, as with a thorough resolution, that instant, to constrain him. When this decree passed in the senate, Claudius had scarce patience to contain himself a day before the celebration of his nuptials. However, such was the detestation in which the people in general held these incestuous matches, that though they were made lawful, yet only one of his tribunes, and one of his freedmen, followed his example.

296 The emperor marries Agrippina.

Claudius having now received a new director, submitted with more implicit obedience than in any former part of his reign. Agrippina's chief aims were to gain the succession in favour of her own son Nero, and to set aside the claims of young Britannicus, son to the emperor and Messalina. For this purpose she married Nero to the emperor's daughter Octavia, a few days after her own marriage. Not long after this she urged the emperor to strengthen the succession, in imitation of his predecessors, by making a new adoption; and caused him to take in her son Nero, in some measure to divide the fatigues of government. Her next care was to increase her son's popularity, by giving him Seneca for a tutor. This excellent man, by birth a Spaniard, had been banished by Claudius, upon the false testimony of Messalina, who had accused him of adultery with Julia the emperor's niece. The people loved and admired him for his genius, but still more for his strict morality; and a part of his reputation necessarily devolved to his pupil. This subtle woman was not less assiduous in pretending the utmost affection for Britannicus; whom, however, she resolved in a proper time to destroy: but her jealousy was not confined to this child only; she, shortly after her accession, procured the deaths of several ladies who had been her rivals in the emperor's affections. She displaced the captains of the guard, and appointed Burrhus to that command; a person of great military knowledge, and strongly attached to her interests. From that time she took less pains to disguise her power, and frequently entered the Capitol in a chariot; a privilege which none before were allowed, except of the sacerdotal order.

In the 12th year of this monarch's reign, she persuaded him to restore liberty to the Rhodians, of which he had deprived them some years before; and to remit the taxes of the city Ilium, as having been the progenitors of Rome. Her design in this was to increase the popularity of Nero, who pleaded the cause of both cities with great approbation. Thus did this ambitious woman take every step to aggrandize her son, and was even contented to become hateful herself to the public, merely to increase his popularity.

Such a very immoderate abuse of her power served at last to awaken the emperor's suspicions. Agrippina's imperious temper began to grow unsupportable to him; and he was heard to declare, when heated with wine, that it was his fate to suffer the disorders of his wives, and to be their executioner. This expression sunk deep on her mind, and engaged all her faculties to prevent the blow. Her first care was to remove Narcissus, whom she hated upon many accounts, but particularly for his attachment to Claudius. This minister, for some time, opposed her designs; but at length thought fit to retire, by a voluntary exile, into Campania. The unhappy emperor, thus exposed to all the machinations of his insidious consort, seemed entirely regardless of the dangers that threatened his destruction. His affection for Britannicus was perceived every day to increase, which served also to increase the vigilance and jealousy of Agrippina. She now, therefore, resolved not to defer a crime which she had meditated a long while before; namely, that of poisoning her husband. She for some time, however, debated with herself in what manner she should administer the poison; as she feared too strong a dose would discover her treachery, and one too weak might fail of its effect.

At

Rome.

297 By whom he is poiſoned.

At length ſhe determined upon a poiſon of ſingular efficacy to deſtroy his intellects, and yet not ſuddenly to terminate his life. As ſhe had been long converſant in this horrid practice, ſhe applied to a woman called *Locuſta*, notorious for aſſiſting on ſuch occaſions. The poiſon was given to the emperor among muſhrooms, a diſh he was particularly fond of. Shortly after having eaten, he dropped down inſenſible; but this cauſed no alarm, as it was uſual with him to ſit eating till he had ſtupified all his faculties, and was obliged to be carried off to his bed from the table. However, his conſtitution ſeemed to overcome the effects of the potion, when Agrippina reſolved to make ſure of him: wherefore ſhe directed a wretched phyſician, who was her creature, to thruſt a poiſoned feather down his throat, under pretence of making him vomit; and this diſpatched him.

The reign of the emperor, feeble and impotent as he was, produced no great calamities in the ſtate, ſince his cruelties were chiefly levelled at thoſe about his perſon. The liſt of the inhabitants of Rome at this time amounted to ſix millions eight hundred and forty-four thouſand ſouls; a number little inferior to all the people of England at this day. The general character of the times was that of corruption and luxury: but the military ſpirit of Rome, though much relaxed from its former ſeverity, ſtill continued to awe mankind; and though during this reign, the empire might be juſtly ſaid to be without a head, yet the terror of the Roman name alone kept the nations in obedience.

Claudius being deſtroyed, Agrippina took every precaution to conceal his death from the public, until ſhe had ſettled her meaſures for ſecuring the ſucceſſion. A ſtrong guard was placed at all the avenues of the palace, while ſhe amuſed the people with various reports; at one time giving out that he was ſtill alive; at another, that he was recovering. In the meanwhile, ſhe made ſure of the perſon of young Britannicus, under a pretence of affection for him. Like one overcome with the extremity of her grief, ſhe held the child in her arms, calling him the dear image of his father, and thus preventing his eſcape. She uſed the ſame precautions with regard to his ſiſters, Octavia and Antonia; and even ordered an entertainment in the palace, as if to amuſe the emperor. At laſt, when all things were adjuſted, the palace-gates were thrown open, and Nero, accompanied by Burrhus, prefect of the Prætorian guards, iſſued to receive the congratulations of the people and the army. The cohorts then attending, proclaimed him with the loudeſt acclamations, though not without making ſome inquiries after Britannicus. He was carried in a chariot to the reſt of the army; wherein having made a ſpeech proper to the occaſion, and promiſing them a donation, in the manner of his predeceſſors, he was declared emperor by the army, the ſenate, and the people.

298 Nero ſucceeds to the empire.

Nero's firſt care was, to ſhow all poſſible reſpect to the deceaſed emperor, in order to cover the guilt of his death. His obſequies were performed with a pomp equal to that of Auguſtus: the young emperor pronounced his funeral oration, and he was canonized among the gods. The funeral oration, though ſpoken by Nero, was drawn up by Seneca; and it was remarked, that this was the firſt time a Roman emperor needed the aſſiſtance of another's eloquence.

Nero, though but 17 years of age, began his reign with the general approbation of mankind. As he owed the empire to Agrippina, ſo in the beginning he ſubmitted to her directions with the moſt implicit obedience. On her part, ſhe ſeemed reſolved on governing with her natural ferocity, and conſidered her private animoſities as the only rule to guide her in public juſtice. Immediately after the death of Claudius, ſhe cauſed Silanus, the pro-conſul of Aſia, to be aſſaſſinated upon very ſlight ſuſpicions, and without ever acquainting the emperor with her deſign. The next object of her reſentment was Narciſſus, the late emperor's favourite; a man equally notorious for the greatneſs of his wealth and the number of his crimes. He was obliged to put an end to his life by Agrippina's order, though Nero refuſed his conſent.

Rome.

299 His excellent adminiſtration for five years.

This bloody onſet would have been followed by many ſeverities of the ſame nature, had not Seneca and Burrhus, the emperor's tutor and general, oppoſed. Theſe worthy men, although they owed their riſe to the empreſs, were above being the inſtruments of her cruelty. They, therefore, combined together in an oppoſition; and gaining the young emperor on their ſide, formed a plan of power, at once the moſt merciful and wiſe. The beginning of this monarch's reign, while he continued to act by their counſels, has always been conſidered as a model for ſucceeding princes to govern by. The famous emperor Trajan uſed to ſay, "That for the firſt five years of this prince all other governments came ſhort of his." In fact, the young monarch knew ſo well how to conceal his innate depravity, that his neareſt friends could ſcarce perceive his virtues to be but aſſumed. He appeared juſt, liberal, and humane. When a warrant for the execution of a criminal was brought to him to be ſigned, he was heard to cry out, with ſeeming concern, "Would to Heaven that I had never learned to write!" The ſenate, upon a certain occaſion, giving him their applauſe for the regularity and juſtice of his adminiſtration; he replied with ſingular modeſty, "That they ſhould defer their thanks till he had deſerved them." His condeſcenſion and affability were not leſs than his other virtues; ſo that the Romans began to think, that the clemency of this prince would compenſate for the tyranny of his predeceſſors.

In the mean time, Agrippina, who was excluded from any ſhare in government, attempted, by every poſſible method, to maintain her declining power. Perceiving that her ſon had fallen in love with a freedwoman, named *Acte*, and dreading the influence of a concubine, ſhe tried every art to prevent his growing paſſion. However, in ſo corrupt a court, it was no difficult matter for the emperor to find other confidents ready to aſſiſt him in his wiſhes. The gratification of his paſſion, therefore, in this inſtance, only ſerved to increaſe his hatred for the empreſs. Nor was it long before he gave evident marks of his diſobedience, by diſplacing Pallas her chief favourite. It was upon this occaſion that ſhe firſt perceived the total declenſion of her authority; which threw her into the moſt ungovernable fury. In order to give terror to her rage, ſhe proclaimed that Britannicus, the real heir to the throne, was ſtill living, and in a condition to receive his father's empire, which was now poſſeſſed by an uſurper. She threatened to go to the camp, and

300 He provokes his mother.

liberty to direct himself. She had united the dangerous designs of Agrippina; and, by degrees accustomed his mind to reflect on parricide without horror. His cruelties against his mother began rather by various circumstances of petty malice than by any downright injury. He encouraged several persons to tease her with litigious suits; and employed some of the meanest of the people to sing satirical songs against her, under her windows: but, at last, finding these ineffectual in breaking her spirit, he resolved on putting her to death. His first attempt was by poison; but this, though twice repeated, proved ineffectual, as she had fortified her constitution against it by antidotes. This failing, a ship was contrived in so artificial a manner as to fall to pieces in the water; on board of which she was invited to sail to the coasts of Calabria. However, this plot was as ineffectual as the former: the mariners, not being apprised of the secret, disturbed each other's operations; so that the ship not sinking as readily as was expected, Agrippina found means to continue swimming, till she was taken up by some trading vessels passing that way. Nero finding all his machinations were discovered, resolved to throw off the mask, and put her openly to death, without further delay. He therefore caused a report to be spread, that she had conspired against him, and that a poniard was dropped at his feet by one who pretended a command from Agrippina to assassinate him. In consequence of this, he applied to his governors Seneca and Burrhus, for their advice how to act, and their assistance in ridding him of his fears. Things were now come to such a crisis, that no middle way could be taken; and either Nero or Agrippina was to fall. Seneca, therefore, kept a profound silence; while Burrhus, with more resolution, refused to be perpetrator of so great a crime; alleging, that the army was entirely devoted to all the descendants of Cæsar, and would never be brought to imbrue their hands in the blood of any of his family. In this embarrassment, Anicetus, the contriver of the ship abovementioned, offered his services; which Nero accepted with the greatest joy, crying out, "That then was the first moment he ever found himself an emperor." This freedman, therefore, taking with him a body of soldiers, surrounded the house of Agrippina, and then forced open the doors. The executioners having dispatched her with several wounds, left her dead on the couch, and went to inform Nero of what they had done. Some historians say, that Nero came immediately to view the body; that he continued to gaze upon it with pleasure, and ended his horrid survey, by cooly observing, that he never thought his mother had been so handsome.—However this be, he vindicated his conduct next day to the senate; who not only excused, but applauded his impiety.

Rome.

303 Causes his mother to be murdered.

All the bounds of virtue being thus broken down, Nero now gave a loose to his appetites, that were not only sordid but inhuman. There seemed an odd contrast in his disposition; for while he practised cruelties which were sufficient to make the mind shudder with horror, he was fond of those amusing arts that soften and refine the heart. He was particularly addicted, even from childhood, to music, and not totally ignorant of poetry. But chariot-driving was his favourite pursuit. He never missed the circus when chariot-races were to be exhibited there; appearing at first privately, and soon

304 Folly and meanness of Nero.

As Nero increased in years, his crimes seemed to increase in equal proportion. He now began to find a pleasure in running about the city by night, disguised like a slave. In this vile habit he entered taverns and brothels, attended by the lewd ministers of his pleasures, attempting the lives of such as opposed him, and frequently endangering his own. In imitation of the emperor's example, numbers of profligate young men infested the streets likewise; so that every night the city was filled with tumult and disorder. However, the people bore all these levities, which they ascribed to the emperor's youth, with patience, having occasion every day to experience his liberality, and having also been gratified by the abolition of many of their taxes. The provinces also were no way affected by these riots; for except disturbances on the side of the Parthians, which were soon suppressed, they enjoyed the most perfect tranquillity.

But those sensualities, which, for the first four years of his reign, produced but few disorders, in the fifth became alarming. He first began to transgress the bounds of decency, by publicly abandoning Octavia, his present wife, and then by taking Poppea, the wife of his favourite Otho, a woman more celebrated for her beauty than her virtues. This was another grating circumstance to Agrippina, who vainly used all her interest to disgrace Poppea, and reinstate herself in her son's lost favour. Historians assert, that she even offered to satisfy his passion herself, by an incestuous compliance; and that, had not Seneca interposed the son would have joined in the mother's crime. This however, does not seem probable, since we find Poppea victorious, soon after, in the contention of interests; and at last impelling Nero to parricide, to satisfy her revenge. She began her arts by urging him to divorce his present wife, and marry herself: she reproached him as a pupil, who wanted not only power over others, but

Rome. foon after publicly; till at laſt, his paſſion increaſing by indulgence, he was not content with being merely a ſpectator, but reſolved to become one of the principal performers. His governors, however, did all in their power to reſtrain this perverted ambition; but finding him reſolute, they incloſed a ſpace of ground in the valley of the Vatican, where he firſt exhibited only to ſome choſen ſpectators, but ſhortly after invited the whole town. The praiſes of his flattering ſubjects only ſtimulated him ſtill more to theſe unbecoming purſuits: ſo that he now reſolved to aſſume a new character, and to appear as a ſinger upon the ſtage.

His paſſion for muſic, as was obſerved, was no leſs natural to him than the former; but as it was leſs manly, ſo he endeavoured to defend it by the example of ſome of the moſt celebrated men, who practiſed it with the ſame fondneſs. He had been inſtructed in the principles of this art from his childhood; and upon his advancement to the empire, he had put himſelf under the moſt celebrated maſters. He patiently ſubmitted to their inſtructions, and uſed all thoſe methods which ſingers practiſe, either to mend the voice, or improve its volubility. Yet, notwithſtanding all his aſſiduity, his voice was but a wretched one, being both feeble and unpleaſant. However, he was reſolved to produce it to the public, ſuch as it was; for flattery, he knew, would ſupply every deficiency. His firſt public appearance was at games of his own inſtitution, called *juveniles*; where he advanced upon the ſtage, tuning his inſtrument to his voice with great appearance of ſkill. A group of tribunes and centurions attended behind him; when his old governor Burrhus ſtood by his hopeful pupil, with indignation in his countenance, and praiſes on his lips.

He was deſirous alſo of becoming a poet: but he was unwilling to undergo the pain of ſtudy, which a proficiency in that art requires; he was deſirous of being a poet ready made. For this purpoſe, he got together ſeveral perſons, who were conſidered as great wits at court, though but very little known as ſuch to the public. Theſe attended him with verſes which they had compoſed at home, or which they blabbed out extemporaneouſly; and the whole of their compoſitions being tacked together, by his direction, was called a *poem*. Nor was he without his philoſophers alſo; he took a pleaſure in hearing their debates after ſupper, but he heard them merely for his amuſement.

Furniſhed with ſuch talents as theſe for giving pleaſure, he was reſolved to make the tour of his empire, and give the moſt public diſplay of his abilities wherever he came. The place of his firſt exhibition, upon leaving Rome, was Naples. The crowds there were ſo great, and the curioſity of the people ſo earneſt in hearing him, that they did not perceive an earthquake that happened while he was ſinging. His deſire of gaining the ſuperiority over the other actors was truly ridiculous: he made intereſt with his judges, reviled his competitors, formed private factions to ſupport him, all in imitation of thoſe who got their livelihood upon the ſtage. While he continued to perform, no man was permitted to depart from the theatre, upon any pretence whatſoever. Some were ſo fatigued with hearing him, that they leaped privately from the walls, or pretended to fall into fainting fits, in order to be carried out. May, it is ſaid, that ſeveral women were delivered in the theatre. Soldiers were placed in ſeveral parts to obſerve the looks and geſtures of the ſpectators, either to direct them where to point their applauſe, or reſtrain their diſpleaſure. An old ſenator, named *Veſpaſian*, afterwards emperor, happening to fall aſleep upon one of theſe occaſions, very narrowly eſcaped with his life. Rome.

After being fatigued with the praiſes of his countrymen, Nero reſolved upon going over into Greece, to receive new theatrical honours. The occaſion was this. The cities of Greece had made a law to ſend him the crowns from all the games; and deputies were accordingly diſpatched with this (to him) important embaſſy. As he one day entertained them at his table in the moſt ſumptuous manner, and converſed with them with the utmoſt familiarity, they intreated to hear him ſing. Upon his complying, the artful Greeks teſtified all the marks of eccſtaſy and rapture. Applauſes ſo warm were peculiarly pleaſing to Nero: he could not refrain from crying out, That the Greeks alone were worthy to hear him; and accordingly prepared without delay to go into Greece, where he ſpent the whole year enſuing. In this journey, his retinue reſembled an army in number; but it was only compoſed of ſingers, dancers, taylors, and other attendants upon the theatre. He paſſed over all Greece, and exhibited at all their games, which he ordered to be celebrated in one year. At the Olympic games he reſolved to ſhow the people ſomething extraordinary; wherefore, he drove a chariot with 10 horſes; but being unable to ſuſtain the violence of the motion, he was driven from his ſeat. The ſpectators, however, gave their unanimous applauſe, and he was crowned as conqueror. In this manner he obtained the prize at the Iſthmian, Pythian, and Nemean games. The Greeks were not ſparing of their crowns; he obtained 1800 of them. An unfortunate ſinger happened to oppoſe him on one of theſe occaſions, and exerted all the powers of his art, which, it appears, were prodigious. But he ſeems to have been a better ſinger than a politician; for Nero ordered him to be killed on the ſpot. Upon his return from Greece, he entered Naples, through a breach in the walls of the city, as was cuſtomary with thoſe who were conquerors in the Olympic games. But all the ſplendor of his return was reſerved for his entry into Rome. There he appeared ſeated in the chariot of Auguſtus, dreſſed in robes of purple, and crowned with wild olive, which was the Olympic garland. He bore in his hand the Pythian crown, and had 1100 more carried before him.—Beſide him ſat one Diodorus, a muſician; and behind him followed a band of ſingers, as numerous as a legion, who ſung in honour of his victories. The ſenate, the knights, and the people, attended this puerile pageant, filling the air with their acclamations. The whole city was illuminated, every ſtreet ſmoked with incenſe; wherever he paſſed, victims were ſlain; the pavement was ſtrewed with ſaffron, while garlands of flowers, ribbons, fowls, and paſties, (for ſo we are told), were ſhowered down upon him from the windows as he paſſed along. So many honours only inflamed his deſires of acquiring new; he at laſt began to take leſſons in wreſtling; willing to imitate Hercules in ſtrength, as he had rivalled Apollo in activity. He alſo cauſed a

lion

Rome. lion of paſteboard to be made with great art, againſt which he undauntedly appeared in the theatre, and ſtruck it down with a blow of his club.

But his cruelties even outdid all his other extravagancies, a complete liſt of which would exceed the limits of the preſent article. He was often heard to obſerve, that he had rather be hated than loved. When one happened to ſay in his preſence, That the world might be burned when he was dead: "Nay," replied
305 Burning of Rome. Nero, "let it be burnt while I am alive." In fact, a great part of the city of Rome was conſumed by fire ſhortly after. This remarkable conflagration took place in the 11th year of Nero's reign. The fire began among certain ſhops, in which were kept ſuch goods as were proper to feed it; and ſpread every way with ſuch amazing rapidity, that its havock was felt in diſtant ſtreets, before any meaſures to ſtop it could be tried. Beſides an infinite number of common houſes, all the noble monuments of antiquity, all the ſtately palaces, temples, porticoes, with goods, riches, furniture, and merchandize, to an immenſe value, were devoured by the flames, which raged firſt in the low regions of the city, and then mounted to the higher with ſuch terrible violence and impetuoſity, as to fruſtrate all relief. The ſhrieks of the women, the various efforts of ſome endeavouring to ſave the young and tender, of others attempting to aſſiſt the aged and infirm, and the hurry of ſuch as ſtrove only to provide for themſelves, occaſioned a mutual interruption and univerſal confuſion. Many, while they chiefly regarded the danger that purſued them from behind, found themſelves ſuddenly involved in the flames before and on every ſide. If they eſcaped into the quarters adjoining, or into the parts quite remote, there too they met with the devouring flames. At laſt, not knowing whither to fly, nor where to ſeek ſanctuary, they abandoned the city, and repaired to the open fields. Some, out of deſpair for the loſs of their whole ſubſtance, others, through tenderneſs for their children and relations, whom they had not been able to ſnatch from the flames, ſuffered themſelves to periſh in them, though they might eaſily have found means to eſcape. No man dared to ſtop the progreſs of the fire, there being many who had no other buſineſs but to prevent with repeated menaces all attempts of that nature; nay, ſome were, in the face of the public, ſeen to throw lighted fire-brands into the houſes, loudly declaring that they were authoriſed ſo to do; but whether this was only a device to plunder more freely, or in reality they had ſuch orders, was never certainly known.

Nero, who was then at Antium, did not offer to return to the city, till he heard that the flames were advancing to his palace, which, after his arrival, was, in ſpite of all oppoſition, burnt down to the ground, with all the houſes adjoining to it. However, Nero, affecting compaſſion for the multitude, thus vagabond and bereft of their dwellings, laid open the field of Mars, and all the great edifices erected there by Agrippa, and even his own gardens. He likewiſe cauſed tabernacles to be reared in haſte for the reception of the forlorn populace; from Oſtia, too, and the neighbouring cities, were brought, by his orders, all ſorts of furniture and neceſſaries, and the price of corn was conſiderably leſſened. But theſe bounties, however generous and popular, were beſtowed in vain, becauſe a report was ſpread abroad, that, during the time of this general conflagration, he mounted his domeſtic ſtage, and Rome. ſung the deſtruction of Troy, comparing the preſent deſolation to the celebrated calamities of antiquity. At length, on the ſixth day, the fury of the flames was ſtopped at the foot of mount Eſquiline, by levelling with the ground an infinite number of buildings; ſo that the fire found nothing to encounter but the open fields and empty air.

But ſcarce had the late alarm ceaſed, when the fire broke out anew with freſh rage, but in places more wide and ſpacious; whence fewer perſons were deſtroyed, but more temples and public porticoes were overthrown. As this ſecond conflagration broke out in certain buildings belonging to Tigellinus, they were both generally aſcribed to Nero; and it was conjectured, that, by deſtroying the old city, he aimed at the glory of building a new one, and calling it by his name. Of the fourteen quarters into which Rome was divided, four remained entire, three were laid in aſhes, and, in the ſeven others, there remained here and there a few houſes, miſerably ſhattered, and half conſumed. Among the many ancient and ſtately edifices, which the rage of the flames utterly conſumed, Tacitus reckons the temple dedicated by Servius Tullius to the Moon; the temple and great altar conſecrated by Evander to Hercules; the chapel vowed by Romulus to Jupiter Stator; the court of Numa, with the temple of Veſta, and in it the tutelar gods peculiar to the Romans. In the ſame fate were involved the ineſtimable treaſures acquired by ſo many victories, the wonderful works of the beſt painters and ſculptors of Greece, and, what is ſtill more to be lamented, the ancient writings of celebrated authors, till then preſerved perfectly entire. It was obſerved, that the fire began the ſame day on which the Gauls, having formerly taken the city, burnt it to the ground.

306 Nero's golden palace. Upon the ruins of the demoliſhed city, Nero founded a palace, which he called his *golden houſe*; though it was not ſo much admired on account of an immenſe profuſion of gold, precious ſtones, and other ineſtimable ornaments, as for its vaſt extent, containing ſpacious fields, large wilderneſſes, artificial lakes, thick woods, orchards, vineyards, hills, groves, &c. The entrance of this ſtately edifice was wide enough to receive a coloſſus, repreſenting Nero, 120 feet high: the galleries, which conſiſted of three rows of tall pillars, were each a full mile in length; the lakes were encompaſſed with magnificent buildings, in the manner of cities, and the woods ſtocked with all manner of wild beaſts. The houſe itſelf was tiled with gold: the walls were covered with the ſame metal, and richly adorned with precious ſtones and mother-of-pearl, which in thoſe days was valued above gold: the timber-work and ceilings of the rooms were inlaid with gold and ivory: the roof of one of the banqueting rooms reſembled the firmament both in its figure and motion, turning inceſſantly about night and day, and ſhowering all ſorts of ſweet waters. When this magnificent ſtructure was finiſhed, Nero approved of it only ſo far as to ſay, that *at length he began to lodge like a man.* Pliny tells us that this palace extended quite round the city. Nero, it ſeems, did not finiſh it; for the firſt order Otho ſigned was, as we read in Suetonius, for fifty millions of ſeſterces to be employed in perfecting the golden palace which Nero had begun.

Rome.

307 Undertakes to cut a canal from Avernus to Tiber.

The projectors of the plan were Severus and Celer, two bold and enterprising men, who soon after put the emperor upon a still more expensive and arduous undertaking, namely, that of cutting a canal through hard rocks and steep mountains, from the lake Avernus to the mouth of the Tiber, 160 miles in length, and of such breadth that two galleys of five ranks of oars might easily pass abreast. His view in this was to open a communication between Rome and Campania, free from the troubles and dangers of the sea; for, this very year, a great number of vessels laden with corn were shipwrecked at Misenum, the pilots choosing rather to venture out in a violent storm, than not to arrive at the time they were expected by Nero. For the executing of this great undertaking, the emperor ordered the prisoners from all parts to be transported into Italy; and such as were convicted, whatever their crimes were, to be condemned only to his works. Nero, who undertook nothing with more ardour and readiness than what was deemed impossible, expended incredible sums in this rash undertaking, and exerted all his might to cut through the mountains adjoining to the lake Avernus; but, not being able to remove by art the obstacles of nature, he was in the end obliged to drop the enterprise.

308 Rome rebuilt.

The ground that was not taken up by the foundations of Nero's own palace, he assigned for houses, which were not placed, as after the burning of the city by the Gauls, at random, and without order; but the streets were laid out regularly, spacious, and straight; the edifices restrained to a certain height, perhaps of 70 feet, according to the plan of Augustus; the courts were widened; and to all the great houses which stood by themselves, and were called *isles*, large porticoes were added, which Nero engaged to raise at his own expence, and to deliver to each proprietor the squares about them clear from all rubbish. He likewise promised rewards according to every man's rank and substance; and fixed a day for the performance of his promise, on condition that against that day their several houses and palaces were finished. He moreover made the following wise regulations to obviate such a dreadful calamity for the future; to wit, That the new buildings should be raised to a certain height without timber; that they should be arched with stone from the quarries of Gabii and Alba, which were proof against fire; that over the common springs, which were diverted by private men for their own uses, overseers should be placed to prevent that abuse; that every citizen should have ready in his house some machine proper to extinguish the fire; that no wall should be common to two houses, but every house be inclosed within its own peculiar walls, &c. Thus the city in a short time rose out of its ashes with new lustre, and more beautiful than ever. However, some believed, that the ancient form was more conducing to health, the rays of the sun being hardly felt on account of the narrowness of the streets, and the height of the buildings, whereas now there was no shelter against the scorching heat. We are told, that Nero designed to extend the walls to Ostia, and to bring from thence by a canal the sea into the city.

The emperor used every art to throw the odium of this conflagration upon the Christians, who were at that time gaining ground in Rome. Nothing could be more dreadful than the persecution raised against them upon this false accusation, of which an account is given under the article *Ecclesiastical History*. Hitherto, however, the citizens of Rome seemed comparatively exempted from his cruelties, which chiefly fell upon strangers, and his nearest connections; but a conspiracy formed against him by Piso, a man of great power and integrity, which was prematurely discovered, opened a new train of suspicions that destroyed many of the principal families in Rome. This conspiracy, in which several of the chief men of the city were concerned, was first discovered by the indiscreet zeal of a woman named *Epicharis*, who, by some means now unknown, had been let into the plot, which she revealed to Volusius, a tribune, in order to prevail upon him to be an accomplice. Volusius, instead of coming into her design, went and discovered what he had learned to Nero, who immediately put Epicharis in prison. Soon after, a freedman belonging to Scænius, one of the accomplices, made a farther discovery. The conspirators were examined apart; and as their testimonies differed, they were put to the torture. Natalis was the first who made a confession of his own guilt and that of many others. Scænius gave a list of the conspirators still more ample. Lucan, the poet, was amongst the number; and he, like the rest, in order to save himself, still farther enlarged the catalogue, naming, among others, Attilia, his own mother. Epicharis was now, therefore, again called upon and put to the torture; but her fortitude was proof against all the tyrant's cruelty; neither scourging nor burning, nor all the malicious methods used by the executioners, could extort the smallest confession. She was therefore remanded to prison, with orders to have her tortures renewed the day following. In the meantime, she found an opportunity of strangling herself with her handkerchief, by hanging it against the back of her chair. On the discoveries already made, Piso, Lateranus, Fennius Rufus, Subrius Flavius, Sulpitius Asper, Vestinus the consul, and numberless others, were all executed without mercy. But the two most remarkable personages who fell on this occasion were Seneca the philosopher, and Lucan the poet, who was his nephew. It is not certainly known whether Seneca was really concerned in this conspiracy or not.—This great man had for some time perceived the outrageous conduct of his pupil; and, finding himself incapable of controuling his savage disposition, had retired from court into solitude and privacy. However, his retreat did not now protect him; for Nero, either having real testimony against him, or else hating him for his virtues, sent a tribune to inform him that he was suspected as an accomplice, and soon after sent him an order to put himself to death, with which he complied.

Rome.

309 The conspiracy of Piso

In this manner was the whole city filled with slaughter, and frightful instances of treachery. No matter was secure from the vengeance of his slaves, nor even parents from the baser attempts of their children. Not only throughout Rome, but the whole country round, bodies of soldiers were seen in pursuit of the suspected and the guilty. Whole crowds of wretches loaded with chains were led every day to the gates of the palace, to wait their sentence from the tyrant's own lips. He always presided at the torture in person, attended by Tigellinus,

of Nero, &c.

...a civil war, capable of the greatest calamities, was kindled in the empire. The ambition of the generals, and the corruption of the troops, had long been the bane of the republic; but the former had hitherto been restrained by the fear of punishment, and the latter by the want of opportunity. Now, however, the case was altered. The emperor was detested by the whole world, and the soldiers had it in their power to make a general of any one they pleased.

A war that was carried on against the Parthians for the greatest part of this reign, conducted by Corbulo; who, after many successful campaigns, had dispossessed Tiridates, and settled Tigranes in Armenia in his room. Tiridates, however, was soon after restored by an invasion of the Parthians into that country; but being once more opposed by Corbulo, the Romans and Parthians came to an agreement, that Tiridates should continue to govern Armenia, upon condition that he should lay down his crown at the feet of the emperor's statue, and receive it as coming from him; all which he shortly after performed. A ceremony, however, which Nero desired to have repeated to his person; wherefore by large promises he invited Tiridates to Rome, granting him the most magnificent supplies for his journey. Nero attended his arrival with very extraordinary preparations. He received him seated on a throne, accompanied by the senate standing round him, and the whole army drawn out with all imaginable splendor.—Tiridates ascended the throne with great reverence; and approaching the emperor fell down at his feet, and in the most abject terms acknowledged himself his slave. Nero raised him up, telling him with equal arrogance, that he did well, and that by his submission he had gained a kingdom which his ancestors could never acquire by their arms. He then placed the crown on his head, and, after the most costly ceremonies and entertainments, he was sent back to Armenia, with inexhaustible sums of money to defray the expences of his return.

In the 12th year of this emperor's reign, the Jews also revolted, having been severely oppressed by the Roman governor. It is said that Florus, in particular, was arrived at that degree of tyranny, that by public proclamation he gave permission to plunder the country, provided he received half the spoil. These oppressions drew such a train of calamities after them, that the sufferings of all other nations were but trifles in comparison to what this devoted people afterwards endured, as is related under the article Jews. In the mean time, Nero proceeded in his cruelties at Rome with undiminished severity.

Corbulo, who had gained so many victories over the Parthians, could not escape his fury. Nero and the empress Poppæa, being at Antium, he received from the emperor, by a messenger, a letter, which he opened, read, and then killed himself. Soon after Rome began to groan under every species of misery, and there appeared a general revolution in all the provinces.

The first appeared in Gaul, under Julius Vindex, who commanded the legions there, and publicly protested against the tyrannical government of Nero. He pretended to have no other motive for this revolt than that of freeing the world from an oppressor; for when it was told him that Nero had set a reward upon his head of 10,000,000 of sesterces, he made this gallant answer: "Whoever assassinate Nero's head, friend, if he please, have mine." But still more to show that he was not actuated by motives of private ambition, he proclaimed Sergius Galba emperor, and invited him to join in the revolt. Galba, who was at that time governor of Spain, was equally remarkable for his wisdom in peace and his courage in war. But as all talents under corrupt princes are dangerous, he for some years had seemed willing to court obscurity, giving himself up to an inactive life, and avoiding all opportunities of signalizing his valour. He now therefore, either through the caution attending old age, or from a total want of ambition, appeared little inclined to join with Vindex, and continued for some time to deliberate with his friends on the part he should take.

In the mean time, Nero, who had been apprised of the proceedings against him in Gaul, appeared totally regardless of the danger, privately flattering himself that the suppression of this revolt would give him an opportunity of fresh confiscations. But the actual revolt of Galba, the news of which arrived soon after, affected him in a very different manner. The reputation of that general was such, that from the moment he declared against him, Nero considered himself as undone. He received the account as he was at supper; and instantly, struck with terror, overturned the table with his feet, breaking two crystal vases of immense value. He then fell into a swoon; from which when he recovered he tore his clothes, and struck his head, crying out, "that he was utterly undone." He then began to meditate things more extensive than he yet had committed. He resolved to massacre all the governors of provinces, to destroy all exiles, and to murder all the Gauls in Rome, as a punishment for the treachery of their countrymen. In short, in the wildness of his rage, he thought of poisoning the whole senate, of burning the city, and turning the lions kept for the purposes of the theatre out upon the people. These designs being impracticable, he resolved at last to face the danger in person. But his very preparations served to mark the infatuation of his mind. His principal care was, to provide waggons for the convenient carriage of his musical instruments; and to dress out his concubines like Amazons, with whom he intended to face the enemy. He also made a resolution, that if he came off with safety and empire, he would appear again upon the theatre with the lute, and would equip himself as a pantomime.

313 And of Galba.

While Nero was thus frivolously employed, the revolt became general. Not only the armies in Spain and Gaul, but also the legions in Germany, Africa, and Lusitania, declared against him. Virginius Rufus alone, who commanded an army on the Upper Rhine, for a while continued in suspense; during which his forces, without his command, falling upon the Gauls, routed them with great slaughter, and Vindex slew himself. But this did not very much advance the interests of Nero: he was so detested by the whole empire, that he could find none of the armies faithful to him, however they might disagree with each other. He therefore called the Jews to furnish him with poison; and, thus prepared for the worst, he retired to the Servilian gardens,

314 Miserable situation of Nero.

Rome. dens, with a resolution of flying into Egypt. He accordingly dispatched the freedmen, in which he had the most confidence, to prepare a fleet at Ostia; and in the meanwhile sounded, in person, the tribunes and centurions of the guard, to know if they were willing to share his fortunes. But they all excused themselves, under divers pretexts. One of them had the boldness to answer him by a part of a line from Virgil: *Usque adeone mi serum est mori?* "Is death then such a misfortune?" Thus destitute of every resource, all the expedients that cowardice, revenge, or terror could produce, took place in his mind by turns. He at one time resolved to take refuge among the Parthians; at another, to deliver himself up to the mercy of the insurgents: one while, he determined to mount the rostrum, to ask pardon for what was past, and to conclude with promises of amendment for the future. With these gloomy deliberations he went to bed; but waking about midnight, he was surprised to find his guards had left him. The prætorian soldiers, in fact, having been corrupted by their commander, had retired to their camp, and proclaimed Galba emperor. Nero immediately sent for his friends to deliberate upon his present exigence; but his friends also forsook him. He went in person from house to house; but all the doors were shut against him, and none were found to answer his inquiries. While he was pursuing this inquiry, his very domestics followed the general defection; and having plundered his apartment, escaped different ways. Being now reduced to desperation, he desired that one of his favourite gladiators might come and dispatch him; but even in this request there was none found to obey. "Alas! (cried he) have I neither friend nor enemy?" And then running desperately forth, he seemed resolved to plunge headlong into the Tiber. But just then his courage beginning to fail him, he made a sudden stop, as if willing to recollect his reason; and asked for some secret place, where he might re-assume his courage, and meet death with becoming fortitude. In this distress, Phaon, one of his freedmen, offered him his country-house, at about four miles distant, where he might for some time remain concealed. Nero accepted his offer; and, half-dressed as he was, with his head covered, and hiding his face with an handkerchief, he mounted on horseback, attended by four of his domestics, of whom the wretched Sporus was one. His journey, though quite short, was crowded with adventures. Round him he heard nothing but confused noises from the camp, and the cries of the soldiers, imprecating a thousand evils upon his head. A passenger, meeting him on the way, cried, "There go men in pursuit of Nero." Another asked him, if there was any news of Nero in the city? His horse taking fright at a dead body that lay near the road, he dropped his handkerchief; and a soldier that was near, addressed him by name. He now therefore quitted his horse, and forsaking the highway, entered a thicket that led towards the back part of Phaon's house, through which he crept, making the best of his way among the reeds and brambles, with which the place was overgrown. When he was arrived at the back part of the house, while he was waiting till there should be a breach made in the wall, he took up some water in the hollow of his hands from a pool to drink; saying, "To this liquor is Nero reduced." When the hole was made large enough to admit him, he crept in upon all-fours, and took a short repose upon a wretched pallet, that had been prepared for his reception. Being pressed by hunger, he demanded somewhat to eat: they brought him a piece of brown bread, which he refused; but he drank a little water. During this interval, the senate finding the prætorian guards had taken part with Galba, declared him emperor, and condemned Nero to die *more maiorum*; that is, "according to the rigour of the ancient laws." These dreadful tidings were quickly brought by one of Phaon's slaves from the city, while Nero yet continued lingering between his hopes and his fears. When he was told of the resolution of the senate against him, he asked the messenger what he meant by being punished "according to the rigour of the ancient laws?" To this he was answered, that the criminal was to be stripped naked, his head was to be fixed in a pillory, and in that posture he was to be scourged to death. Nero was so terrified at this, that he seized two poniards which he had brought with him, and examining their points, returned them to their sheaths, saying, that the fatal moment was not yet arrived. However, he had little time to spare; for the soldiers who had been sent in pursuit of him were just then approaching the house: wherefore hearing the sound of the horse's feet, he set a dagger to his throat, with which, by the assistance of Epaphroditus, his freedman and secretary, he gave himself a mortal wound. He was not quite dead when one of the centurions entering the room, and pretending he came to his relief, attempted to stop the blood with his cloak But Nero, regarding him with a stern countenance, said, "It is now too late. Is this your fidelity?"—Upon which, with his eyes fixed, and frightfully staring, he expired, in the 32d year of his age, and the 14th of his reign. Rome.

315 His death.

316 Uncertainties of Galba in the beginning of his reign.

Galba was 72 years old when he was declared emperor, and was then in Spain with his legions. However, he soon found that his being raised to the throne was but an inlet to new disquietudes. His first embarrassment arose from a disorder in his own army; for upon his approaching the camp, one of the wings of horse repenting of their choice, prepared to revolt, and he found it no easy matter to reconcile them to their duty. He also narrowly escaped assassination from some slaves, who were presented to him by one of Nero's freedmen with that intent. The death of Vindex also served to add not a little to his disquietudes; so that, upon his very entrance into the empire, he had some thoughts of putting an end to his own life. But hearing from Rome that Nero was dead, and the empire transferred to him, he immediately assumed the title and ensigns of command. In his journey towards Rome he was met by Rufus Virginius, who, finding the senate had decreed him the government, came to yield him obedience. This general had more than once refused the empire himself, which was offered him by his soldiers; alleging, that the senate alone had the disposal of it, and from them only he would accept the honour.

317 Faults in his administration.

Galba having been brought to the empire by means of his army, was at the same time willing to suppress their power to commit any future disturbance. His first approach to Rome was attended with one of those rigorous strokes of justice which ought rather to be denominated *cruelty* than any thing else. A body of mariners,

...ers, whom Nero had taken from the oar and enlisted among the legions, went to meet Galba, three miles from the city, and with loud importunities demanded a confirmation of what his predecessor had done in their favour. Galba, who was rigidly attached to the ancient discipline, deferred their request to another time. But they, considering this delay as equivalent to an absolute denial, insisted in a very disrespectful manner; and some of them even had recourse to arms: whereupon Galba ordered a body of horse attending him to ride in among them, and thus killed seven of them; but not content with this punishment, he afterwards ordered them to be decimated. Their insolence demanded correction; but such extensive punishments deviated into cruelty. His next step to curb the insolence of the soldiers, was his discharging the German cohort, which had been established by the former emperors as a guard to their persons. Those he sent home to their own country unrewarded, pretending they were disaffected to his person. He seemed to have two other objects also in view; namely, to punish those vices which had come to an enormous height in the last reign, with the strictest severity; and to replenish the exchequer, which had been quite drained by the prodigality of his predecessors. But these attempts only brought on him the imputation of severity and avarice; for the state was too much corrupted to admit of such an immediate transition from vice to virtue. The people had long been maintained in sloth and luxury by the prodigality of the former emperors, and could not think of being obliged to seek for new means of subsistence, and to retrench their superfluities. They began, therefore, to satirize the old man, and turn the simplicity of his manners into ridicule. Among the marks of avarice recorded of him, he is said to have groaned upon having an expensive soup served up to his table; he is said to have presented to his steward, for his fidelity, a plate of beans; a famous player upon the flute, named *Canus*, having greatly delighted him, it is reported, that he drew out his purse, and gave him five-pence, telling him, that it was private and not public money. By such ill-judged frugalities, at such a time, Galba began to lose his popularity; and he, who before his accession was esteemed by all, being become emperor, was considered with ridicule and contempt. But there are some circumstances alleged against him, less equivocal than these trifling ones already mentioned. Shortly after his coming to Rome, the people were presented with a most grateful spectacle, which was that of Locusta, Elius, Pomletus, Petronius, and Petinus, all the bloody ministers of Nero's cruelty, drawn in fetters through the city, and publicly executed. But Tigellinus, who had been more active than all the rest, was not there. The crafty villain had taken care for his own safety, by the largeness of his bribes; and though the people cried out for vengeance against him at the theatre and at the circus, yet the emperor granted him his life and pardon. Helotus the eunuch, also, who had been the instrument of poisoning Claudius, escaped, and owed his safety to the prevalent application of his wealth. Thus, by the inequality of the emperor, he became despicable to his subjects. At one time he was himself severe and frugal, at another remiss and prodigal; condemning some ill-disposed persons without hearing, and pardoning others through guilty: in short, nothing was done but by the mediation of his favourites; all offices were venal, and all punishments redeemable by money.

Affairs were in this unsettled posture at Rome, when the provinces were yet in a worse condition. The success of the army in Spain in choosing an emperor induced the legions in the other parts to wish for a similar opportunity. Accordingly, many seditions were kindled, and several factions promoted in different parts of the empire, but particularly in Germany. There were then in that province two Roman armies; the one which had lately attempted to make Rufus Virginius emperor, as has been already mentioned, and which was commanded by his lieutenant; the other commanded by Vitellius, who long had an ambition to obtain the empire for himself. The former of these armies despising their present general, and considering themselves as suspected by the emperor for having been the last to acknowledge his title, resolved now to be foremost in denying it. Accordingly, when they were summoned to take the oaths of homage and fidelity, they refused to acknowledge any other commands but those of the senate. This refusal they backed by a message of the prætorian bands, importing, that they were resolved not to acquiesce in the election of an emperor created in Spain, and desiring that the senate should proceed to a new choice.

Galba being informed of this commotion, was sensible, that, besides his age, he was less respected for want of an heir. He resolved therefore to put what he had formerly designed in execution, and to adopt some person whose virtues might deserve such advancement, and protect his declining age from danger. His favourites understanding his determination, instantly resolved to give him an heir of their own choosing; so that there arose a great contention among them upon this occasion. Otho made warm application for himself; alleging the great services he had done the emperor, as being the first man of note who came to his assistance when he had declared against Nero. However, Galba, being fully resolved to consult the public good alone, rejected his suit; and on a day appointed ordered Piso Lucinianus to attend him. The character given by historians of Piso is, that he was every way worthy of the honour designed him. He was noway related to Galba; and had no other interest but merit to recommend him to his favour. Taking this youth therefore by the hand, in the presence of his friends, he adopted him to succeed in the empire, giving him the most wholesome lessons for guiding his future conduct. Piso's conduct showed that he was highly deserving this distinction: in all his deportment there appeared such modesty, firmness, and equality of mind, as bespoke him rather capable of discharging, than ambitious of obtaining, his present dignity. But the army and the senate did not seem equally disinterested upon this occasion; they had been so long used to bribery and corruption, that they could now bear no emperor who was not in a capacity of satisfying their avarice. The adoption therefore of Piso was but coldly received; for his virtues were no recommendation in a nation of universal depravity.

Otho now finding his hopes of adoption wholly frustrated, and ill further it mutated by the immense load of debt which he had contracted by his riotous way of living, resolved upon obtaining the empire by force, since

318
Otho declared emperor.

Rome. since he could not by peaceable ſucceſſion. In fact, his circumſtances were ſo very deſperate, that he was heard to ſay, that it was equal to him whether he fell by his enemies in the field or by his creditors in the city. He therefore raiſed a moderate ſum of money, by ſelling his intereſt to a perſon who wanted a place; and with this bribed two ſubaltern officers in the prætorian bands, ſupplying the deficiency of largeſſes by promiſes and plauſible pretences. Having in this manner, in leſs than eight days, corrupted the fidelity of the ſoldiers, he ſtole ſecretly from the emperor while he was ſacrificing; and aſſembling the ſoldiers, in a ſhort ſpeech urged the cruelties and avarice of Galba. Finding theſe his invectives received with univerſal ſhouts by the whole army, he entirely threw off the maſk, and avowed his intentions of dethroning him. The ſoldiers being ripe for ſedition, immediately ſeconded his views: taking Otho upon their ſhoulders, they inſtantly proclaimed him emperor; and, to ſtrike the citizens with terror, carried him with their ſwords drawn into the camp.

319 Galba murdered.

Galba, in the mean time, being informed of the revolt of the army, ſeemed utterly confounded, and in want of ſufficient reſolution to face an event which he ſhould have long foreſeen. In this manner the poor old man continued wavering and doubtful; till at laſt, being deluded by a falſe report of Otho's being ſlain, he rode into the forum in complete armour, attended by many of his followers. Juſt at the ſame inſtant a body of horſe ſent from the camp to deſtroy him entered on the oppoſite ſide, and each party prepared for the encounter. For ſome time hoſtilities were ſuſpended on each ſide; Galba, confuſed and irreſolute, and his antagoniſts ſtruck with horror at the baſeneſs of their enterpriſe. At length, however, finding the emperor in ſome meaſure deſerted by his adherents, they ruſhed in upon him, trampling under foot the crowds of people that then filled the forum. Galba ſeeing them approach, ſeemed to recollect all his former fortitude; and bending his head forward, bid the aſſaſſins ſtrike it off if it were for the good of the people. This was quickly performed; and his head being ſet upon the point of a lance, was preſented to Otho, who ordered it to be contemptuouſly carried round the camp; his body remaining expoſed in the ſtreets till it was buried by one of his ſlaves. He died in the 73d year of his age, after a ſhort reign of ſeven months.

No ſooner was Galba thus murdered, than the ſenate and people ran in crowds to the camp, contending who ſhould be foremoſt in extolling the virtues of the new emperor, and depreſſing the character of him they had ſo unjuſtly deſtroyed. Each laboured to excel the reſt in his inſtances of homage; and the leſs his affections were for him, the more did he indulge all the vehemence of exaggerated praiſe. Otho finding himſelf ſurrounded by congratulating multitudes, immediately repaired to the ſenate, where he received the titles uſually given to the emperors; and from thence returned to the palace, ſeemingly reſolved to reform his life, and aſſume manners becoming the greatneſs of his ſtation.

He began his reign by a ſignal inſtance of clemency, in pardoning Marius Celſus, who had been highly favoured by Galba; and not contented with barely forgiving, he advanced him to the higheſt honours; aſſerting, that "fidelity deſerved every reward." This act of clemency was followed by another of juſtice, equally agreeable to the people. Tigellinus, Nero's favourite, he who had been the promoter of all his cruelties, was now put to death; and all ſuch as had been unjuſtly baniſhed, or ſtripped, at his inſtigation, during Nero's reign, were reſtored to their country and fortunes. Rome.

320 Vitellius revolts.

In the mean time, the legions in Lower Germany having been purchaſed by the large gifts and ſpecious promiſes of Vitellius their general, were at length induced to proclaim him emperor; and regardleſs of the ſenate, declared that they had an equal right to appoint to that high ſtation with the cohorts at Rome. The news of this conduct in the army ſoon ſpread conſternation throughout Rome; but Otho was particularly ſtruck with the account, as being apprehenſive that nothing but the blood of his countrymen could decide a conteſt of which his own ambition only was the cauſe. He now therefore ſought to come to an agreement with Vitellius; but this not ſucceeding, both ſides began their preparations for war. News being received that Vitellius was upon his march to Italy, Otho departed from Rome with a vaſt army to oppoſe him. But though he was very powerful with regard to numbers, his men, being little uſed to war, could not be relied on. He ſeemed by his behaviour ſenſible of the diſproportion of his forces; and he is ſaid to have been tortured with frightful dreams and the moſt uneaſy apprehenſions. It is alſo reported by ſome, that one night fetching many profound ſighs in his ſleep, his ſervants ran haſtily to his bed ſide, and found him ſtretched on the ground. He alleged he had ſeen the ghoſt of Galba, which had, in a threatening manner, beat and puſhed him from the bed; and he afterwards uſed many expiations to appeaſe it. However this be, he proceeded with a great ſhow of courage till he arrived at the city of Brixellum, on the river Po, where he remained, ſending his forces before him under the conduct of his generals Suetonius and Celſus, who made what haſte they could to give the enemy battle. The army of Vitellius, which conſiſted of 70,000 men, was commanded by his generals Valens and Cecina, he himſelf remaining in Gaul in order to bring up the reſt of his forces. Thus both ſides haſtened to meet each other with ſo much animoſity and precipitation, that three conſiderable battles were fought in the ſpace of three days. One near Placentia, another near Cremona, and a third at a place called *Caſtor*; in all which Otho had the advantage. But theſe ſucceſſes were of but ſhort-lived continuance; for Valens and Cecina, who had hitherto acted ſeparately, joining their forces, and reinforcing their armies with freſh ſupplies, reſolved to come to a general engagement. Otho, who by this time had joined his army at a little village called *Bedriacum*, finding the enemy, notwithſtanding their late loſſes, inclined to come to a battle, reſolved to call a council of war to determine upon the proper meaſures to be taken. His generals were of opinion to protract the war: but others, whoſe inexperience had given them confidence, declared, that nothing but a battle could relieve the miſeries of the ſtate; proteſting, that Fortune, and all the gods, with the divinity of the emperor himſelf, favoured the deſign, and would undoubtedly proſper the enterpriſe.

321 Otho defeated at Bedriacum.

to this advice Otho acquiesced: he had been for some time so uneasy under the war, that he seemed willing to discharge suspense for danger. However, he was so surrounded with flatterers, that he was prohibited from being personally present in the engagement, but prevailed upon to reserve himself for the fortune of the empire, and wait the event at Brixellum. The affairs of both armies being thus adjusted, they came to an engagement at Bedriacum; where, in the beginning, those on the side of Otho seemed to have the advantage. At length, the superior discipline of the legions of Vitellius turned the scale of victory. Otho's army fled in great confusion towards Bedriacum, being pursued with a miserable slaughter all the way.

In the mean time, Otho waited for the news of the battle with great impatience, and seemed to tax his messengers with delay. The first account of his defeat was brought him by a common soldier, who had escaped from the field of battle. However, Otho, who was still surrounded by flatterers, was desired to give no credit to a base fugitive, who was guilty of falsehood only to cover his own cowardice. The soldier, however, still persisted in the veracity of his report; and, finding none inclined to believe him, immediately fell upon his sword, and expired at the emperor's feet. Otho was so much struck with the death of this man, that he cried out, that he would cause the ruin of no more such valiant and worthy soldiers, but would end the contest the shortest way; and therefore having exhorted his followers to submit to Vitellius, he put an end to his own life.

It was no sooner known that Otho had killed himself, than all the soldiers repaired to Virginius, the commander of the German legions, earnestly intreating him to take upon him the reins of government; or at least, intreating his meditation with the generals of Vitellius in their favour. Upon his declining their request, Rubrius Gallus, a person of considerable note, undertook their embassy to the generals of the conquering army; and soon after obtained a pardon for all the adherents of Otho.

Vitellius was immediately after declared emperor by the senate; and received the marks of distinction which were now accustomed to follow the appointment of the strongest side. At the same time, Italy was severely distressed by the soldiers, who committed such outrages as exceeded all the oppressions of the most calamitous war. Vitellius, who was yet in Gaul, resolved, before he set out for Rome, to punish the prætorian cohorts, who had been the instruments of all the late disturbances in the state. He therefore caused them to be disarmed, and deprived of the name and honour of soldiers. He also ordered 150 of those who were most guilty to be put to death.

As he approached towards Rome, he passed through the towns with all imaginable splendor; his passage by water was in painted galleys, adorned with garlands of flowers, and profusely furnished with the greatest delicacies. In his journey there was neither order nor discipline among his soldiers; they plundered wherever they came with impunity; and he seemed no way displeased with the horrid effects of their behaviour.

Upon his arrival at Rome, he entered the city, not as a place he came to govern with justice, but as a town that became his own by the laws of conquest. He marched through the streets mounted on horseback, all in armour; the senate and people going before him, as if the captives of his late victory. He the next day made the senate a speech, in which he magnified his own actions, and promised them extraordinary advantages from his administration. He then harangued the people, who being now long accustomed to flatter all in authority, highly applauded and blessed their new emperor. Rome.

In the mean time, his soldiers being permitted to satiate themselves in the debaucheries of the city, grew totally unfit for war. The principal affairs of the state were managed by the lowest wretches. Vitellius, more abandoned than they, gave himself up to all kinds of luxury and profuseness: but gluttony was his favourite vice, so that he brought himself to a habit of vomiting, in order to renew his meals at pleasure. His entertainments, though seldom at his own cost, were prodigiously expensive; he frequently invited himself to the tables of his subjects, breakfasting with one, dining with another, and supping with a third, all in the same day. The most memorable of these entertainments was that made for him by his brother on his arrival at Rome. In this were served up 2000 several dishes of fish, and 7000 of fowl, of the most valuable kinds. But in one particular dish he seemed to have outdone all the former profusion of the most luxurious Romans. This dish, which was of such magnitude as to be called the *shield of Minerva*, was filled with an olio made from the sounds of the fish called *scarri*, the brains of pheasants and woodcocks, the tongues of the most costly birds, and the spawn of lampreys brought from the Carpathian sea. In order to cook this dish properly, a furnace was built in the fields, as it was too large for any kitchen to contain it. 226 His shameful gluttony, and other vices.

In this manner did Vitellius proceed; so that Josephus tells us, if he had reigned long, the whole empire would not have been sufficient to have maintained his gluttony. All the attendants of his court fought to raise themselves, not by their virtues and abilities, but the sumptuousness of their entertainments. This prodigality produced its attendant, want; and that, in turn, gave rise to cruelty.

Those who had formerly been his associates were now destroyed without mercy. Going to visit one of them in a violent fever, he mingled poison with his water, and delivered it to him with his own hands. He never pardoned those money-lenders who came to demand payment of his former debts. One of the number coming to salute him, he immediately ordered him to be carried off to execution; but shortly after, commanding him to be brought back, when all his attendants thought it was to pardon the unhappy creditor, Vitellius gave them soon to understood that it was merely to have the pleasure of feeding his eyes with his torments. Having condemned another to death, he executed his two sons with him, only for their presuming to intercede for their father. A Roman knight being dragged away to execution, and crying out that he had made the emperor his heir, Vitellius demanded to see the will, where finding himself joint heir with another, he ordered both to be executed, that he might enjoy the legacy without a partner.

By the continuance of such vices and cruelties as these he became odious to all mankind, and the astrologers

Rome. logers began to prognoſticate his ruin. A writing was ſet up in the forum to this effect: "We, in the name of the ancient Chaldeans, give Vitellius warning to depart this life by the kalends of October." Vitellius, on his part, received this information with terror, and ordered all the aſtrologers to be baniſhed from Rome. An old woman having foretold, that if he ſurvived his mother, he ſhould reign many years in happineſs and ſecurity, this gave him a deſire of putting her to death; which he did, by refuſing her ſuſtenance, under the pretence of its being prejudicial to her health. But he ſoon ſaw the futility of relying upon ſuch vain prognoſtications; for his ſoldiers, by their cruelty
327 and rapine, having become inſupportable to the inha-
Veſpaſian bitants of Rome, the legions of the Eaſt, who had at
proclaimed firſt acquieſced in his dominion, began to revolt, and
emperor. ſhortly after unanimouſly reſolved to make Veſpaſian emperor.

Veſpaſian, who was appointed commander againſt the rebellious Jews, had reduced moſt of their country, except Jeruſalem, to ſubjection. The death of Nero, however, had at firſt interrupted the progreſs of his arms, and the ſucceſſion of Galba gave a temporary check to his conqueſts, as he was obliged to ſend his ſon Titus to Rome, to receive that emperor's commands. Titus, however, was ſo long detained by contrary winds, that he received news of Galba's death before he ſet ſail. He then reſolved to continue neuter during the civil wars between Otho and Vitellius; and when the latter prevailed, he gave him his homage with reluctance. But being deſirous of acquiring reputation, though he diſliked the government, he determined to lay ſiege to Jeruſalem, and actually made preparations for that great undertaking, when he was given to underſtand that Vitellius was deteſted by all ranks in the empire. Theſe murmurings increaſed every day, while Veſpaſian ſecretly endeavoured to advance the diſcontents of the army. By theſe means they began at length to fix their eyes upon him as the perſon the moſt capable and willing to terminate the miſeries of his country, and put a period to the injuries it ſuffered. Not only the legions under his command, but thoſe in Mœſia and Pannonia, came to the ſame reſolution, ſo that they declared themſelves for Veſpaſian. He was alſo without his own conſent proclaimed emperor at Alexandria, the army there confirming it with extraordinary applauſe, and paying their accuſtomed homage. Still, however, Veſpaſian ſeemed to decline the honour done him; till at length his ſoldiers compelled him, with their threats of immediate death, to accept a title which, in all probability, he wiſhed to enjoy. He now, therefore, called a council of war: where it was reſolved, that his ſon Titus ſhould carry on the war againſt the Jews; and that Mutianus, one of his generals, ſhould, with the greateſt part of his legions, enter Italy; while Veſpaſian himſelf ſhould levy forces in all parts of the eaſt, in order to reinforce them in caſe of neceſſity.

During theſe preparations, Vitellius, though buried in ſloth and luxury, was reſolved to make an effort to defend the empire; wherefore his chief commanders, Valens and Cecina, were ordered to make all poſſible preparations to reſiſt the invaders. The firſt army that entered Italy with an hoſtile intention was under the command of Antonius Primus, who was met by Cecina near Cremona. A battle was expected to enſue; Rome. but a negociation taking place, Cecina was prevailed upon to change ſides, and declare for Veſpaſian. His army, however, quickly repented of what they had done; and impriſoning their general, attacked Antonius, though without a leader. The engagement con- 328 Vitellius
tinued during the whole night: in the morning, after a defeated.
ſhort repaſt, both armies engaged a ſecond time; when the ſoldiers of Antonius ſaluting the riſing ſun, according to cuſtom, the Vitellians ſuppoſing that they had received new reinforcements, betook themſelves to flight, with the loſs of 30,000 men. Shortly after, freeing their general Cecina from priſon, they prevailed upon him to intercede with the conquerors for pardon; which they obtained, though not without the moſt horrid barbarities committed upon Cremona, the city to which they had retired for ſhelter.

When Vitellius was informed of the defeat of his army, his former inſolence was converted into an extreme of timidity and irreſolution. At length he commanded Julius Priſcus and Alphenus Varus, with ſome forces that were in readineſs, to guard the paſſes of the Apennines, to prevent the enemy's march to Rome; reſerving the principal body of his army to ſecure the city, under the command of his brother Lucius. But being perſuaded to repair to his army in perſon, his preſence only ſerved to increaſe the contempt of his ſoldiers. He there appeared irreſolute, and ſtill luxurious, without counſel or conduct, ignorant of war, and demanding from others thoſe inſtructions which it was his duty to give. After a ſhort continuance in the camp, and underſtanding the revolt of his fleet, he returned once more to Rome: but every day only ſerved to render his affairs ſtill more deſperate; till at laſt he made offers to Veſpaſian of reſigning the empire, provided his life was granted, and a ſufficient revenue for his ſupport. In order to enforce his requeſt, he iſſued from his palace in deep mourning, with all his domeſtics weeping round him. He then went to offer the ſword of juſtice to Cecilius, the conſul; which he refuſing, the abject emperor prepared to lay down the enſigns of the empire in the temple of Concord. But being interrupted by ſome, who cried out, That he himſelf was Concord, he reſolved, upon ſo weak an encouragement, ſtill to maintain his power, and immediately prepared for his defence.

During this fluctuation of counſels, one Sabinus, who had adviſed Vitellius to reſign, perceiving his deſperate ſituation, reſolved, by a bold ſtep, to oblige
329 Veſpaſian, and accordingly ſeized upon the Capitol. The capi-
But he was premature in his attempt; for the ſoldiers tal burnt.
of Vitellius attacked him with great fury, and, prevailing by their numbers, ſoon laid that beautiful building in aſhes. During this dreadful conflagration, Vitellius was feaſting in the palace of Tiberius, and beholding all the horrors of the aſſault with great ſatisfaction. Sabinus was taken priſoner, and ſhortly after executed by the emperor's command. Young Domitian, his nephew, who was afterwards emperor, eſcaped by flight, in the habit of a prieſt; and all the reſt who ſurvived the fire were put to the ſword.

But this ſucceſs ſerved little to improve the affairs of Vitellius. He vainly ſent meſſenger after meſſenger to being Veſpaſian's general, Antonius, to a compoſition.

This

The commander gave no anſwer to his requeſts, but continued his march towards Rome. Being arrived before the walls of the city, the forces of Vitellius were encouraged upon obtaining it to the utmoſt extremity. It was attacked on three ſides with the utmoſt fury; while the army within, falling upon the befieged, defended their camp with obſtinacy. The battle laſted a whole day, till at laſt the beſieged were driven into the city, and a dreadful ſlaughter made of them in all the ſtreets, which they vainly attempted to defend. In the mean time, the citizens ſtood by, looking on as both ſides fought; and, as if they had been in a theatre, clapped their hands, at one time encouraging one party, and again the other. As either turned their backs, the citizens would then fall upon them in their places of refuge, and ſo kill and plunder them without mercy. But what was ſtill more remarkable, during theſe dreadful ſlaughters both within and without the city, the people would not be prevented from celebrating one of their riotous feaſts, called the *Saturnalia*; ſo that at one time might have been ſeen a ſtrange mixture of mirth and miſery, of cruelty and lewdneſs; in one place, buryings and ſlaughters; in another, drunkenneſs and feaſting; in a word, all the horrors of a civil war, and all the licentiouſneſs of the moſt abandoned ſecurity!

During this complicated ſcene of miſery, Vitellius retired privately to his wife's houſe, upon mount Aventine, deſigning that night to fly to the army commanded by his brother at Tarracina. But, quite incapable, through fear, of forming any reſolution, he changed his mind, and returned again to his palace, now void and deſolate; all his ſlaves forſaking him in his diſtreſs, and purpoſely avoiding his preſence. There, after wandering for ſome time quite diſconſolate, and fearing the face of every creature he met, he hid himſelf in an obſcure corner, from whence he was ſoon taken by a party of the conquering ſoldiers. Still, however, willing to add a few hours more to his miſerable life, he begged to be kept in priſon till the arrival of Veſpaſian at Rome, pretending that he had ſecrets of importance to diſcover. But his intreaties were vain: the ſoldiers binding his hands behind him, and throwing an halter round his neck, led him along, half naked, into the public forum, upbraiding him, as they proceeded, with all thoſe bitter reproaches their malice could ſuggeſt, or his own cruelties deſerve. They alſo tied his hair backwards, as was uſual with the moſt infamous malefactors, and held the point of a ſword under his chin, to prevent his hiding his face from the public. Some caſt dirt and filth upon him as he paſſed, others ſtruck him with their hands; ſome ridiculed the deformity of his perſon, his red fiery face, and the enormous greatneſs of his belly. At length, being come to the place of puniſhment, they killed him with many blows; and then dragging the dead body through the ſtreets with an hook, they threw it, with all poſſible ignominy into the river Tiber. Such was the miſerable end of this emperor, in the 57th year of his age, after a reign of eight months and five days.

331 Dreadful cruelties practiſed by the ſoldiers.

Vitellius being dead, the conquering army purſued their enemies throughout the city, while neither houſe nor temples afforded refuge to the fugitives. The ſtreets and public places were all ſtrewed with dead, each man lying there where it was his misfortune to be overtaken by the unmerciful purſuers. But not only the enemy ſuffered in this manner, but many of the citizens, who were obnoxious to the ſoldiers, were dragged from their houſes, and killed without any form of trial. The heat of their reſentment being ſomewhat abated, they next began to ſeek for plunder; and under pretence of ſearching for the enemy, left no place without marks of their rage or rapacity. Beſides the ſoldiers, the lower rabble joined in theſe deteſtable outrages; ſome ſlaves came and diſcovered the riches of their maſters; ſome were detected by their neareſt friends; the whole city was filled with outcry and lamentation; inſomuch, that the former ravages of Otho and Vitellius were now conſidered as ſlight evils in compariſon.

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At length, however, upon the arrival of Mutianus, general to Veſpaſian, theſe ſlaughters ceaſed, and the ſtate began to wear the appearance of former tranquillity. Veſpaſian was declared emperor by the unanimous conſent both of the ſenate and the army; and dignified with all thoſe titles, which now followed rather the power than the merit of thoſe who were appointed to govern. Meſſengers were diſpatched to him into Egypt, deſiring his return, and teſtifying the utmoſt deſire for his government. However, the winter being dangerous for ſailing, he deferred his voyage to a more convenient ſeaſon. Perhaps, alſo, the diſſenſions in other parts of the empire retarded his return to Rome; for one Claudius Civilis, in Lower Germany, excited his countrymen to revolt, and deſtroyed the Roman garriſons, which were placed in different parts of that province. But, to give his rebellion an air of juſtice, he cauſed his army to ſwear allegiance to Veſpaſian, until he found himſelf in a condition to throw off the maſk. When he thought himſelf ſufficiently powerful, he diſclaimed all ſubmiſſion to the Roman government; and having overcome one or two of the lieutenants of the empire, and being joined by ſuch of the Romans as refuſed obedience to the new emperor, he boldly advanced to give Cerealis, Veſpaſian's general, battle. In the beginning of this engagement, he ſeemed ſucceſsful, breaking the Roman legions, and putting their cavalry to flight. But at length Cerealis by his conduct turned the fate of the day, and not only routed the enemy, but took and deſtroyed their camp. This engagement, however, was not deciſive; ſeveral others enſued with doubtful ſucceſs. An accommodation at length took place. Civilis obtained peace for his countrymen, and pardon for himſelf; for the Roman empire was, at this time, ſo torn by its own diviſions, that the barbarous nations around made incurſions with impunity, and were ſure of obtaining peace whenever they thought proper to demand it.

332 Veſpaſian proclaimed emperor of Rome.

333 Revolt of Claudius Civilis.

During the time of theſe commotions in Germany, the Sarmatians, a barbarous nation in the north-eaſt of the empire, ſuddenly paſſed the river Iſer, and marched into the Roman dominions with ſuch celerity and fury, as to deſtroy ſeveral garriſons, and an army under the command of Fonteius Agrippa. However, they were driven back by Rubrius Gallus, Veſpaſian's lieutenant, into their native foreſts; where ſeveral attempts were made to confine them by garriſons and forts, placed along the confines of their country. But theſe hardy nations, having once found the way into the empire, never

334 Irruption of the Sarmatians.

Rome. never after desisted from invading it upon every opportunity, till at length they over-ran and destroyed it entirely.

Vespasian continued some months at Alexandria in Egypt, where it is said he cured a blind and a lame man by touching them. Before he set out for Rome, he gave his son Titus the command of the army that was to lay siege to Jerusalem; while he himself went forward, and was met many miles from Rome by all the senate, and near half the inhabitants, who gave the sincerest testimonies of their joy, in having an emperor of such great and experienced virtues. Nor did he in the least disappoint their expectations; being equally assiduous in rewarding merit, and pardoning his adversaries; in reforming the manners of the citizens, and setting them the best example in his power.

335 Titus sent against Jerusalem.

In the mean time, Titus carried on the war against the Jews with vigour, which ended in the terrible destruction of the city, mentioned under the article Jews. After which his soldiers would have crowned Titus as conqueror; but he refused the honour, alleging that he was only an instrument in the hand of Heaven, that manifestly declared its wrath against the Jews. At Rome, however, all mouths were filled with the praises of the conqueror, who had not only showed himself an excellent general, but a courageous combatant: his return, therefore, in triumph, which he did with his father, was marked with all the magnificence and joy that was in the power of men to express. All things that were esteemed valuable or beautiful among men were brought to adorn this great occasion. Among the rich spoils were exposed vast quantities of gold taken out of the temple; but the book of their law was not the least remarkable among the magnificent profusion. A triumphal arch was erected upon this occasion, on which were described all the victories of Titus over the Jews, which remains almost entire to this very day. Vespasian likewise built a temple to Peace, wherein were deposited most of the Jewish spoils; and having now calmed all the commotions in every part of the empire, he shut up the temple of Janus, which had been open about five or six years.

336 Various abuses reformed by Vespasian.

Vespasian having thus given security and peace to the empire, resolved to correct numberless abuses which had grown up under the tyranny of his predecessors. To effect this with greater ease, he joined Titus with him in the consulship and tribunitial power, and in some measure admitted him a partner in all the highest offices of the state. He began with restraining the licentiousness of the army, and forcing them back to their pristine discipline. He abridged the processes that had been carried to an unreasonable length in the courts of justice. He took care to rebuild such parts of the city as had suffered in the late commotions; particularly the Capitol, which had been lately burnt; and which he now restored to more than former magnificence. He likewise built a famous amphitheatre, the ruins of which are to this day an evidence of its ancient grandeur. The other ruinous cities of the empire also shared his paternal care; he improved such as were declining, adorned others, and built many anew. In such acts as these he passed a long reign of clemency and moderation; so that it is said, no man suffered by an unjust or a severe decree during his administration.

Julius Sabinus seems to be the only person who was treated with greater rigour than was usual with this emperor. Sabinus was commander of a small army in Gaul, and had declared himself emperor upon the death of Vitellius. However, his army was shortly after overcome by Vespasian's general, and he himself compelled to seek safety by flight. He for some time wandered through the Roman provinces, without being discovered: but finding the pursuit every day become closer, he was obliged to hide himself in a cave; in which he remained concealed for no less than nine years, attended all the time by his faithful wife Empona, who provided provisions for him by day, and repaired to him by night. However, she was at last discovered in the performance of this pious office, and Sabinus was taken prisoner and carried to Rome. Great intercession was made to the emperor in his behalf: Empona herself appearing with her two children, and imploring her husband's pardon. However, neither her tears nor intreaties could prevail; Sabinus had been too dangerous a rival for mercy; so that, though she and her children were spared, her husband suffered by the executioner.

Rome. 337 Adventures and death of Julius Sabinus.

338 Clemency and good qualities of the emperor.

But this seems to be the only instance in which he resented past offences. He caused the daughter of Vitellius, his avowed enemy, to be married into a noble family, and he himself provided her a suitable fortune. One of Nero's servants coming to beg for pardon for having once rudely thrust him out of the palace, and insulted him when in office, Vespasian only took his revenge by serving him just in the same manner. When any plots or conspiracies were formed against him, he disdained to punish the guilty, saying, That they deserved rather his contempt for their ignorance, than his resentment; as they seemed to envy him a dignity of which he daily experienced the uneasiness. His liberality towards the encouragement of arts and learning, was not less than his clemency. He settled a constant salary of 100,000 sesterces upon the teachers of rhetoric. He was particularly favourable to Josephus, the Jewish historian. Quintilian the orator, and Pliny the naturalist, flourished in his reign, and were highly esteemed by him. He was no less an encourager of all other excellencies in art; and invited the greatest masters and artificers from all parts of the world, making them considerable presents, as he found occasion.

Yet all his numerous acts of generosity and magnificence could not preserve his character from the imputation of rapacity and avarice. He revived many obsolete methods of taxation; and even bought and sold commodities himself, in order to increase his fortune. He is charged with advancing the most avaricious governors to the provinces, in order to share their plunder on their return to Rome. He descended to some very unusual and dishonourable imposts, even to the laying a tax upon urine. When his son Titus remonstrated against the meanness of such a tax, Vespasian taking a piece of money, demanded if the smell offended him; and then added, that this very money was produced by urine. But in excuse for this, we must observe, that the exchequer, when Vespasian came to the throne, was so much exhausted, that he informed the senate that it would require a supply of three hundred millions (sterling) to re-establish the commonwealth. This necessity must naturally produce more numerous and heavy taxations than the empire had hitherto experienced: but while the provinces were thus obliged to

contribute

contribute to the support of his power, he took every precaution to provide for their safety; so that we find but two insurrections in this reign.—In the fourth year of his reign, Antiochus king of Comagena, holding a private correspondence with the Parthians, the declared enemies of Rome, was taken prisoner in Cilicia, by Pyrrhus the governor, and sent bound to Rome. But Vespasian generously prevented all ill treatment, by giving him a residence at Lacedæmon, and allowing him a revenue suitable to his dignity. About the same time also, the Alani, a barbarous people inhabiting along the river Tanais, abandoned their barren wilds, and invaded the kingdom of Media. From thence passing into Armenia, after great ravages, they overthrew Tiridates, the king of that country, with prodigious slaughter. Titus was at length sent to chastise their insolence: but the barbarians retired at the approach of the Roman army, loaded with plunder; being compelled to wait a more favourable opportunity of renewing their irruptions. These incursions, however, were but a transient storm, the effects of which were soon repaired by the emperor's moderation and assiduity. We are told, that he now formed and established a thousand nations, which had scarcely before amounted to 200. No provinces in the empire lay out of his view and protection. He had, during his whole reign, a particular regard to Britain; his generals, Petilius Cerealis, and Julius Frontinus, brought the greatest part of the island into subjection; and Agricola, who succeeded soon after, completed what they had begun. See ENGLAND.

339 Death of Vespasian.

In this manner, having reigned 10 years, loved by his subjects, and deserving their affection, he was surprised by an indisposition at Campania, which he at once declared would be fatal, crying out, in the spirit of Paganism, "Methinks I am going to be a god." Removing from thence to the city, and afterwards to a country-seat near Reate, he was there taken with a flux, which brought him to the last extremity. However, perceiving his end approach, and just going to expire, he cried out, that an emperor ought to die standing; wherefore, raising himself upon his feet, he expired in the hands of those that sustained him.

340 Titus succeeds to the empire.

Titus being joyfully received as emperor, notwithstanding a slight opposition from his brother Domitian, who maintained that he himself was appointed, and that Titus had falsified the will, began his reign with every virtue that became an emperor and a man. During the life of his father there had been many imputations against him; but upon his exaltation to the throne he seemed entirely to take leave of his former vices, and became an example of the greatest moderation and humanity. He had long loved Berenice, sister to Agrippa, king of Judea, a woman of the greatest beauty and allurements. But knowing that the connection with her was entirely disagreeable to the people of Rome, he sent her away, notwithstanding their mutual passion and the many arts she used to induce him to change his resolutions. He next discarded all those who had been the former ministers of his pleasures, and forbore to countenance the companions of his looser recreations, though he had formerly taken great pains in the selection. This moderation, added to his justice and generosity, procured him the love of all good men, and the appellation of the *delight of mankind*, which all his actions seemed calculated to ensure. As he came to the throne with all the advantages of his father's popularity, he was resolved to use every method to increase it. He therefore took particular care to punish all informers, false witnesses, and promoters of dissension, condemning them to be scourged in the most public streets, next to be dragged through the theatre, and then to be banished to the uninhabited parts of the empire, and sold as slaves. His courtesy and readiness to do good have been celebrated even by Christian writers; his principal rule being, never to send any petitioner dissatisfied away. One night, recollecting that he had done nothing beneficial to mankind the day preceding, he cried out among his friends, "I have lost a day." A sentence too remarkable not to be universally known.

341 A dreadful eruption of Vesuvius.

In this reign, an eruption of mount Vesuvius did considerable damage, overwhelming many towns, and sending its ashes into countries more than 100 miles distant. Upon this memorable occasion, Pliny the naturalist lost his life; for, being impelled by too eager a curiosity to observe the eruption, he was suffocated in the flames †. There happened also about this time a fire at Rome, which continued three days and nights successively, which was followed by a plague, in which 10,000 men were buried in a day. The emperor, however, did all that lay in his power to repair the damage sustained by the public; and, with respect to the city, declared that he would take the whole loss of it upon himself. These disasters were in some measure counterbalanced by the successes in Britain under Agricola. This excellent general having been sent into that country towards the latter end of Vespasian's reign, showed himself equally expert in quelling the refractory, and civilizing those who had formerly submitted to the Roman power. The Ordovices, or inhabitants of North Wales, were the first that were subdued. He then made a descent upon Mona, or the island of Anglesea; which surrendered at discretion. Having thus rendered himself master of the whole country, he took every method to restore discipline to his own army, and to introduce some share of politeness among those whom he had conquered, He extorted them, both by advice and example, to build temples, theatres, and stately houses. He caused the sons of their nobility to be instructed in the liberal arts; he had them taught the Latin language, and induced them to imitate the Roman modes of dressing and living. Thus, by degrees, this barbarous people began to assume the luxurious manners of their conquerors, and in time even outdid them in all the refinements of sensual pleasure. For the success in Britain, Titus was saluted emperor the 15th time; but he did not long survive his honours, being seized with a violent fever at a little distance from Rome. Perceiving his death to approach, he declared, that during the whole course of his life he knew but of one action which he repented of; but that action he did not think proper to express. Shortly after, he died (not without suspicion of treachery from his brother Domitian, who had long wished to govern) in the 41st year of his age, having reigned two years two months and twenty days.

† See Vesuvius.

342 Agricola civilizes the Britons.

343 Titus dies.

344 Succeeded by Domitian.

The love which all ranks of people bore to Titus, facilitated the election of his brother Domitian, notwithstanding the ill opinion many had already conceived of him. His ambition was already but too well known,

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known, and his pride ſoon appeared upon his coming to the throne; having been heard to declare, that he had given the empire to his father and brother, and now received it again as his due.

The beginning of his reign was univerſally acceptable to the people, as he appeared equally remarkable for his clemency, liberality, and juſtice. He carried his abhorrence of cruelty ſo far, as at one time to forbid the ſacrificing of oxen. His liberality was ſuch, that he would not accept of the legacies that were left him by ſuch as had children of their own. His juſtice was ſuch, that he would ſit whole days and reverſe the partial ſentences of the ordinary judges. He appeared very careful and liberal in repairing the libraries which had been burnt, and recovering copies of ſuch books as had been loſt, ſending on purpoſe to Alexandria to tranſcribe them. But he ſoon began to ſhow the natural deformity of his mind. Inſtead of cultivating literature, as his father and brother had done, he neglected all kinds of ſtudy, addicting himſelf wholly to the meaner purſuits, particularly archery and gaming. No emperor before him entertained the people with ſuch various and expenſive ſhows. During theſe diverſions he diſtributed great rewards; ſitting as preſident himſelf, adorned with a purple robe and crown, with the prieſts of Jupiter and the college of Flavian prieſts about him. The meanneſs of his occupations in ſolitude were a juſt contraſt to his exhibitions in public oſtentation. He uſually ſpent his hours of retirement in catching flies, and ſticking them through with a bodkin; ſo that one of his ſervants being aſked if the emperor was alone, he anſwered, that he had not ſo much as a fly to bear him company. His vices ſeemed every day to increaſe with the duration of his reign; and as he thus became more odious to his people, all their murmurs only ſerved to add ſtrength to his ſuſpicions, and malice to his cruelty. His ungrateful treatment of Agricola ſeemed the firſt ſymptom of his natural malevolence. Domitian was always particularly fond of obtaining a military reputation, and therefore jealous of it in others. He had marched ſome time before into Gaul, upon a pretended expedition againſt the Catti, a people of Germany; and, without ever ſeeing the enemy, reſolved to have the honour of a triumph upon his return to Rome. For that purpoſe he purchaſed a number of ſlaves, whom he dreſſed in German habits; and at the head of this miſerable proceſſion entered the city, amidſt the apparent acclamations and concealed contempt of all his ſubjects. The ſucceſſes, therefore, of Agricola in Britain affected him with an extreme degree of envy. This admirable general, who is ſcarce mentioned by any writer except Tacitus, purſued the advantages which he had already obtained. He routed the Caledonians; overcame Galgacus, the Britiſh chief, at the head of 30,000 men; and afterwards ſending out a fleet to ſcour the coaſt, firſt diſcovered Great Britain to be an iſland*. He likewiſe diſcovered and ſubdued the Orkneys, and thus reduced the whole into a civilized province of the Roman empire. When the account of theſe ſucceſſes was brought to Domitian, he received it with a ſeeming pleaſure, but real uneaſineſs. He thought Agricola's riſing reputation a reproach upon his own inactivity; and, inſtead of attempting to emulate, he reſolved to ſuppreſs the merit of his ſervices. He ordered him, therefore, the external marks of his approbation, and took care that triumphant ornaments, ſtatues, and other honours, ſhould be decreed him; but at the ſame time he removed him from his command, under a pretence of appointing him to the government of Syria. By theſe means, Agricola ſurrendered up his government to Saluſtius Lucullus, but ſoon found that Syria was otherwiſe diſpoſed of. Upon his return to Rome, which was privately and by night, he was coolly received by the emperor; and dying ſome time after in retirement, it was ſuppoſed by ſome that his end was haſtened by Domitian's direction.

345 His enormous vices.

* See Scotland.

346 Many barbarous nations invade the empire.

Domitian ſoon after found the want of ſo experienced a commander in the many irruptions of the barbarous nations that ſurrounded the empire. The Sarmatians in Europe, joined with thoſe in Aſia, made a formidable invaſion; at once deſtroying a whole legion, and a general of the Romans. The Dacians, under the conduct of Decebalus their king, made an irruption, and overthrew the Romans in ſeveral engagements. Loſſes were followed by loſſes, ſo that every ſeaſon became memorable for ſome remarkable overthrow. At laſt, however, the ſtate making a vigorous exertion of its internal power, the barbarians were repelled, partly by force and partly by the aſſiſtance of money, which only ſerved to enable them to make future invaſions to greater advantage. But in whatever manner the enemy might have been repelled, Domitian was reſolved not to loſe the honour of a triumph. He returned in great ſplendor to Rome; and not contented with thus triumphing twice without a victory, he reſolved to take the ſurname of *Germanicus*, for his conqueſt over a people with whom he never contended.

In proportion as the ridicule increaſed againſt him, his pride ſeemed every day to demand greater homage. He would permit his ſtatues to be made only of gold and ſilver; aſſumed to himſelf divine honours; and ordered that all men ſhould treat him with the ſame appellations which they gave to the divinity. His cruelty was not behind his arrogance; he cauſed numbers of the moſt illuſtrious ſenators and others to be put to death upon the moſt trifling pretences. Saluſtius Lucullus, his lieutenant in Britain, was deſtroyed only for having given his own name to a new ſort of lances of his own invention. Junius Ruſticus died for publiſhing a book, in which he commended Thraſea and Priſcus, two philoſophers who oppoſed Veſpaſian's coming to the throne.

Such cruelties as theſe, that ſeem almoſt without a motive, may naturally be ſuppoſed to have produced rebellion. Lucius Antonius, governor in Upper Germany, knowing how much the emperor was deteſted at home, aſſumed the enſigns of imperial dignity. As he was at the head of a formidable army, his ſucceſs remained long doubtful; but a ſudden overflowing of the Rhine dividing his army, he was ſet upon at that juncture by Normandus, the emperor's general, and totally routed. The news of this victory, we are told, was brought to Rome by ſupernatural means, on the ſame day that the battle was fought. Domitian's ſeverity was greatly increaſed by this ſucceſs, of ſhort duration. In order to diſcover thoſe who were accomplices with the adverſe party, he invented new tortures, ſometimes cutting off the hands, at other times thruſting fire into the privities, of the people whom he ſuſpected of being his enemies. During theſe cruelties, he aggravated

[illegible] cruelty of the emperor.

[illegible] never [illegible] sentence [illegible] He [illegible] the [illegible] [illegible] At [illegible] time, he [illegible] to the [illegible] of the [illegible] At [illegible] he [illegible] to amuse himself with their terrors in a different manner. Having in- [illegible] them [illegible] his palace, and con- [illegible] with black, [illegible] lamps, that dis- fused light only sufficient to show the horrors of the place. All around were to be seen nothing but coffins, [illegible] of [illegible] senators written upon them together with other objects of terror, and instru- [illegible] of execution. While the company beheld all the [illegible] with silent agony, several men, having their bodies blackened, each with a drawn sword in one hand and a flaming torch in the other, entered the hall, and danced round them. After some time, when the guests expected nothing less than instant death, well knowing Domitian's capricious cruelty, the doors were set open, and one of the servants came to inform them, that the emperor gave all the company leave to withdraw.

These cruelties were rendered still more odious by his [illegible] and avarice. Frequently after presiding at an execution, he would retire with the lewdest prostitutes, and use the same baths which they did. His avarice, which was the consequence of his profusion, knew no bounds. He seized upon the estates of all against whom he could find the smallest pretensions; the most trifling action or word against the majesty of the prince was sufficient to ruin the possessor. He particularly exacted large sums from the rich Jews; who even then began to practise the art of peculation, for which they are at present said to be remarkable. He was excited against them, not only by avarice, but by jealousy. A prophecy had been long current in the east, that a person from the line of David should rule the world. Whereupon, this suspicious tyrant, willing to evade the prediction, commanded all the Jews of the lineage of David to be diligently sought out, and put to death. Two Christians, grandsons of St Jude the apostle, of that line, were brought before him; but finding them poor, and no way ambitious of temporal power, he dismissed them, considering them as objects too mean for his jealousy. However, his persecution of the Christians was more severe than that of any of his predecessors. By his letters and edicts they were banished in several parts of the empire, and put to death with all the tortures of ingenious cruelty. The predictions of Chaldeans and astrologers also, concerning his death, gave him most violent apprehensions, and kept him in the most tormenting disquietude. As he approached towards the end of his reign, he would permit no criminal, or prisoner, to be brought into his presence, until they were bound in such a manner as to be incapable of injuring him; [illegible] their chains in his own hands. His jealousies increased to that degree, that he [illegible] he walked to be set round with [illegible], which served as a mirror to reflect the persons of all such as approached him from behind. Every omen and prodigy gave him fresh anxiety.

348 He persecutes the Jews and Christians.

But a period was soon to be put to this monster's cruelty. Among the number of those whom he at once caressed and suspected, was his wife Domitia, whom he had taken from Ælius Lamia, her former husband. This woman, however, was become obnoxious to him, for having placed her affections upon one Paris, a player; and he resolved to dispatch her, with several others that he either hated or suspected. It was the tyrant's method to put down the names of all such as he intended to destroy in his tablets, which he kept about him with great circumspection. Domitia, fortunately happening to get a sight of them, was struck at finding her own name in the catalogue of those fated to destruction. She showed the fatal list to Norbanus and Petronius, prefects of the prætorian bands, who found themselves set down; as likewise to Stephanus, the comptroller of the household, who came into the conspiracy with alacrity. Parthenias also, the chief chamberlain, was of the number. These, after many consultations, determined on the first opportunity to put their design in execution; and at length fixed on the 18th day of September for the completion of their attempt. Domitian, whose death was every day foretold by the astrologers, who, of consequence, must at last be right in their predictions, was in some measure apprehensive of that day; and at he had been ever timorous, so he was now more particularly upon his guard. He had some time before secluded himself in the most secret recesses of his palace; and at midnight was so affrighted as to leap out of his bed, inquiring of his attendants what hour of the night it was. Upon their falsely assuring him that it was an hour later than that which he was taught to apprehend, quite transported, as if all danger was past, he prepared to go to the bath. Just then, Parthenius his chamberlain came to inform him that Stephanus the comptroller of his household desired to speak to him upon an affair of the utmost importance. The emperor having given orders that his attendants should retire, Stephanus entered with his hand in a scarf, which he had worn thus for some days, the better to conceal a dagger, as none were permitted to approach the emperor except unarmed.— He began by giving information of a pretended conspiracy, and exhibited a paper in which the particulars were specified. While Domitian was reading the contents with an eager curiosity, Stephanus drew his dagger, and struck him in the groin. The wound not being mortal, Domitian caught hold of the assassin, and threw him upon the ground, calling out for assistance. He demanded also his sword, that was usually placed under his pillow; and a boy who attended in the apartment, running to fetch it, found only the scabbard, for Parthenius had previously removed the blade. The struggle with Stephanus still continued: Domitian still kept him under, and at one time attempted to wrest the dagger from his hand, at another to tear out his eyes with his fingers. But Parthenius, with his freedman, a gladiator, and two subaltern officers, now coming in, ran all furiously upon the emperor, and dispatched him with many wounds. In the mean time, some of the officers of the guard being alarmed, came to his assistance, but too late to save him; however, they slew Stephanus on the spot.

Rome. 349 A conspiracy formed against him.

350 He is murdered.

When it was publicly known that Domitian was slain, the joy of the senate was so great, that being assembled with the utmost haste, they began to load his memory.

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memory with every reproach. His ſtatues were commanded to be taken down; and a decree was made, that all his inſcriptions ſhould be eraſed, his name ſtruck out of the regiſters of fame, and his funeral omitted. The people, who now took little part in the affairs of government, looked on his death with indifference; the ſoldiers alone, whom he had loaded with favours, and enriched by largeſſes, ſincerely regretted their benefactor. The ſenate, therefore, reſolved to provide a ſucceſſor before the army could have an opportunity of taking the appointment upon themſelves: and Coccéius Nerva was choſen to the empire the very day on which the tyrant was ſlain.

351 Coccéius Nerva made emperor.

Nerva was of an illuſtrious family, as moſt ſay, by birth a Spaniard, and above 65 years old when he was called to the throne. He was, at that time, the moſt remarkable man in Rome, for his virtues, moderation and reſpect to the laws; and he owed his exaltation to the blameleſs conduct of his former life. When the ſenate went to pay him their ſubmiſſions, he received them with his accuſtomed humility; while Arius Antonius, his moſt intimate friend, having embraced him with great familiarity, congratulated him on his acceſſion to the empire: and indeed no emperor had ever ſhewn himſelf more worthy of the throne than Nerva; his only fault being that he was too indulgent, and often made a prey by his inſidious courtiers.

352 His great clemency and moderation.

However, an exceſs of indulgence and humanity were faults that Rome could eaſily pardon, after the cruelties of ſuch an emperor as Domitian. Being long accuſtomed to tyranny, they regarded Nerva's gentle reign with rapture, and even gave his imbecility the name of benevolence. Upon coming to the throne, he ſolemnly ſwore than no ſenator of Rome ſhould be put to death by his command, during his reign, though they gave ever ſo juſt a cauſe. He conferred great favours, and beſtowed large gifts, upon his particular friends. His liberality was ſo extenſive, that, upon his firſt promotion to the empire, he was conſtrained to ſell his gold and ſilver plate, with his other rich moveables, to enable him to continue his liberalities. He releaſed the cities of the empire from many ſevere impoſitions, which had been laid upon them by Veſpaſian; took off a rigorous tribute, which had been laid upon carriages; and reſtored thoſe to their property who had been unjuſtly diſpoſſeſſed by Domitian.

353 Makes ſeveral good laws.

During his ſhort reign he made ſeveral good laws. He particularly prohibited the caſtration of male children; which had been likewiſe condemned by his predeceſſor, but not wholly removed. He put all thoſe ſlaves to death who had, during the laſt reign, informed againſt their maſters. He permitted no ſtatues to be erected to honour him, and converted into money ſuch of Domitian's as had been ſpared by the ſenate. He ſold many rich robes, and much of the ſplendid furniture of the palace, and retrenched ſeveral unreaſonable expences at court. At the ſame time, he had ſo little regard for money, that when Herodes Atticus, one of his ſubjects, had found a large treaſure, and wrote to the emperor how to diſpoſe of it, he received for anſwer, that he might *uſe it*; but the finder ſtill informing the emperor that it was a fortune too large for a private perſon, Nerva, admiring his honeſty, wrote him word, that then he might *abuſe it*.

A life of ſuch generoſity and mildneſs was not, however, without its enemies. Calpurnius Craſſus, with ſome others, formed a dangerous conſpiracy to deſtroy him; but Nerva would uſe no ſeverity: he reſted ſatisfied with baniſhing thoſe who were culpable, though the ſenate were for inflicting more rigorous puniſhments. But the moſt dangerous inſurrection againſt his interests was from the prætorian bands; who, headed by Caſparius Olianus, inſiſted upon revenging the late emperor's death, whoſe memory was ſtill dear to them from his frequent liberalities. Nerva, whoſe kindneſs to good men rendered him ſtill more obnoxious to the vicious, did all in his power to ſtop the progreſs of this inſurrection; he preſented himſelf to the mutinous ſoldiers, and, opening his boſom, deſired them to ſtrike there, rather than be guilty of ſo much injuſtice. The ſoldiers, however, paid no regard to his remonſtrances; but, ſeizing upon Petronius and Parthenius, ſlew them in the moſt ignominious manner. Not content with this, they even compelled the emperor to approve of their ſedition, and to make a ſpeech to the people, in which he thanked the cohorts for their fidelity. So diſagreeable a conſtraint upon the emperor's inclinations was, in the end, attended with the moſt happy effects, as it cauſed the adoption of Trajan to ſucceed him in the empire. Nerva perceived that in the preſent turbulent diſpoſition of the times, he ſtood in need of an aſſiſtant in the empire, who might ſhare the fatigues of government, and contribute to keep the licentious in awe. For this purpoſe, ſetting aſide all his own relations, he fixed upon Ulpius Trajan, an utter ſtranger to his family, who was then governor in Upper Germany, to ſucceed him. Having put his determination in execution, and performed the accuſtomed ſolemnities, he inſtantly ſent off ambaſſadors to Cologne, where Trajan then reſided, intreating his aſſiſtance in puniſhing thoſe from whom he had received ſuch an inſult. The adoption of this admirable man, proved ſo great a curb to the licentiouſneſs of the ſoldiery, that they continued in perfect obedience during the reſt of this reign; and Caſparius being ſent to him, was, by his command, either baniſhed or put to death.

354 Adopts Trajan as his ſucceſſor.

The adopting Trajan was the laſt public act of Nerva. In about three months after, having put himſelf in a violent paſſion with one Regulus a ſenator, he was ſeized with a fever, of which he ſhortly after died, after a ſhort reign of one year four months and nine days. He was the firſt foreign emperor who reigned in Rome, and juſtly reputed a prince of great generoſity and moderation. He is alſo celebrated for his wiſdom, though with leſs reaſon, the greateſt inſtance he gave of it, during his reign, being in the choice of his ſucceſſor.

355 Death of Nerva.

Trajan's family was originally from Italy, but he himſelf was born in Seville in Spain. He very early accompanied his father, who was a general of the Romans, in his expeditions along the Euphrates and the Rhine; and while yet very young, acquired a conſiderable reputation for military accompliſhments. He enured his body to fatigue; he made long marches on foot; and laboured to acquire all the ſkill in war which was neceſſary for a commander. When he was made general of the army in Lower Germany, which was one of the moſt conſiderable employments in the empire, it made no alteration in his manners or way of living; and the commander was ſeen noway differing from the private tribune, except in his ſuperior wiſdom and virtues.

356 Great qualities of Trajan.

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[illegible] The [illegible] were accompa- [illegible] of the [illegible] of [illegible]. His body was [illegible] and vigorous; he was at that [illegible] time of [illegible] happily tempered with the warmth of youth [illegible] and the caution of age, being [illegible] years old. To these [illegible] were added, a modesty [illegible] to [illegible] peculiar to [illegible]; to that [illegible] raised a pleasure in [illegible] the [illegible] which the [illegible] [illegible] by [illegible]. Upon the whole, Trajan is [illegible] as the greatest and the best emperor of [illegible]. Other [illegible] [illegible] in war, and [illegible] [illegible] have [illegible] in [illegible] and goodness; but he seems the only prince who united these [illegible] in the greatest perfection, and who appears equally [illegible] [illegible] administration and our regard. Upon being informed of the death of Nerva, he prepared to return to Rome, whither he was invited by the united [illegible] of the [illegible]. He therefore began his march with the discipline that was for a long time unknown in the armies of the empire. The countries through which he passed were neither ravaged nor taxed, and he entered every [illegible] in a triumphant manner, though he had deserved it often, but on foot, attended by the civil officers of the state, and followed by his soldiers, who marched silently forward with modesty and respect. It would be tedious and unnecessary to enter into a detail of this good monarch's labours for the state. His application to business, his moderation to his enemies, his modesty in exaltation, his liberality to the deserving, and his frugality in his own expences; these have all been the subject of panegyric among his cotemporaries, and they continue to be the admiration of posterity. Upon giving the prefect of the pretorian band the sword, according to custom, he made use of this remarkable expression, "Take this sword, and use it, if I have merit, for me; if otherwise, against me." After which he added, That he who gave laws was the first who was bound to observe them. His failings were his love of women, which, however, never hurried him beyond the bounds of decency; and his immoderate passion for war, to which he had been bred up from his childhood. The first war he was engaged in after his coming to the throne was with the Dacians, who during the reign of Domitian, had committed numberless ravages upon the provinces of the empire. He therefore raised a powerful army, and with great expedition marched into those barbarous countries, where he was vigorously opposed by Decebalus, the Dacian king, who for a long time withstood his boldest efforts; but was at last entirely reduced, and his kingdom made a Roman province, See DACIA. At his return to Rome, he entered the city in triumph; and the rejoicings for his victories lasted for the space of 120 days.

Having thus given peace and prosperity to the empire, Trajan continued his reign, loved, honoured, and almost adored, by his subjects. He adorned the city with public buildings; he freed it from such men as lived by their vices; he entertained persons of merit with the utmost familiarity; and so little feared his enemies, that he could scarcely be induced to suppose that he had any.

357 He persecutes the Christians.

It had been happy for this great prince's memory, if he had shown equal clemency to all his subjects; but, about the ninth year of his reign, he was persuaded to look upon the Christians with a suspicious eye. The extreme veneration which he preserved for the religion of the empire, set him sedulously to oppose every innovation, and the progress of Christianity seemed to alarm him. A law had for some time before been passed, in which all Heteriæ, or societies dissenting from the established religion, were considered as illegal, being reputed nurseries of imposture and sedition. Under the sanction of this law, the Christians were persecuted in all parts of the empire. Great numbers of them were put to death, as well by popular tumults as by edicts and judicial proceedings. However, the persecution ceased after some time; for the emperor having advice from Pliny, the pro-consul in Bithynia, of the innocence and simplicity of the Christians, and of their inoffensive and moral way of living, he suspended their punishments. But a total stop was put to them upon Tiberianus the governor of Palestine's sending him word, That he was wearied out with executing the laws against the Galileans, who crouded to execution in such multitudes, that he was at a loss how to proceed. Upon this information, the emperor gave orders, that the Christians should not be sought after; but if any offered themselves, that they should suffer. In this manner the rage of persecution ceased, and the emperor found leisure to turn the force of his arms against the Armenians and Parthians, who now began to throw off all submission to Rome.

358 Insurrection of the Jews.

While he was employed in these wars, there was a dreadful insurrection of the Jews in all parts of the empire. This wretched people, still infatuated, and ever expecting some signal deliverer, took the advantage of Trajan's absence in the east to massacre all the Greeks and Romans whom they got into their power, without reluctance or mercy. This rebellion first began in Cyrene, a Roman province in Africa; from thence the flame extended to Egypt, and next to the island of Cyprus. These places they in a manner dispeopled with ungovernable fury. Their barbarities were such, that they eat the flesh of their enemies, wore their skins, sawed them asunder, cast them to wild beasts, made them kill each other, and studied new torments by which to destroy them. However, these cruelties were of no long duration: the governors of the respective provinces making head against their tumultuous fury, soon treated them with a retaliation of cruelty, and put them to death, not as human beings, but as outragious pests to society. As the Jews had practised their cruelties in Cyprus particularly, a law was publicly enacted, by which it was made capital for any Jew to set foot on the island.

359 Successes of Trajan in the east.

During these bloody transactions, Trajan was prosecuting his successes in the east. His first march was into Armenia, the king of which country had disclaimed all alliance with Rome, and received the ensigns of royalty and dominion from the monarch of Parthia. However, upon the news of Trajan's expedition, his fears were so great, that he abandoned his country to the invaders; while the greatest part of his governors and nobility came submissively to the emperor, acknowledging themselves his subjects, and making him the most costly presents. Having in this manner taken possession of the whole country, and gotten the king into his power, he marched into the dominions of the

king

Rome. king of Parthia. There entering the opulent kingdom of Meſopotamia, he reduced it into the form of a Roman province. From thence he went againſt the Parthians, marching on foot at the head of his army; in this manner croſſing the rivers, and conforming to all the ſeverities of diſcipline which were impoſed on the meaneſt ſoldier. His ſucceſſes againſt the Parthians were great and numerous. He conquered Syria and Chaldea, and took the famous city of Babylon. Here, attempting to croſs the Euphrates, he was oppoſed by the enemy, who were reſolved to ſtop his paſſage: but he ſecretly cauſed boats to be made upon the adjoining mountains; and bringing them to the water ſide, paſſed his army with great expedition, not, however, without great ſlaughter on both ſides. From thence he traverſed tracts of country which had never before been invaded by a Roman army, and ſeemed to take a pleaſure in purſuing the ſame march which Alexander the Great had formerly marked out for him. Having paſſed the rapid ſtreams of the Tigris, he advanced to the city Cteſiphon, which he took, and opened himſelf a paſſage into Perſia, where he made many conqueſts, that were rather ſplendid than ſerviceable. After ſubduing all the country bordering on the Tigris, he marched ſouthward to the Perſian gulph, where he ſubdued a monarch who poſſeſſed a conſiderable iſland made by the divided ſtreams of that river. Here, winter coming on, he was in danger of loſing the greateſt part of his army by the inclemency of the climate and the inundations of the river. He therefore with indefatigable pains fitted out a fleet, and ſailing down the Perſian gulph, entered the Indian ocean, conquering, even to the Indies, and ſubduing a part of them to the Roman empire. He was prevented from purſuing further conqueſts in this diſtant country, both by the revolt of many of the provinces he had already ſubdued, and by the ſcarcity of proviſions, which ſeemed to contradict the reports of the fertility of the countries he was induced to invade. The inconveniences of increaſing age alſo contributed to damp the ardour of this enterpriſe, which at one time he intended to purſue to the confines of the earth. Returning, therefore, along the Perſian gulph, and ſending the ſenate a particular account of all the nations he had conquered, the names of which alone compoſed a long catalogue, he prepared to puniſh thoſe countries which had revolted from him. He began by laying the famous city of Edeſſa, in Meſopotamia, in aſhes; and in a ſhort ſpace of time, not only retook all thoſe places which had before acknowledged ſubjection, but conquered many other provinces, ſo as to make himſelf maſter of the moſt fertile kingdoms of all Aſia. In this train of ſucceſſes he ſcarce met with a repulſe, except before the city Atra, in the deſerts of Arabia. Wherefore judging that this was a proper time for bounding his conqueſts, he reſolved to give a maſter to the countries he had ſubdued. With this reſolution he repaired to the city Cteſiphon, in Perſia; and there, with great ceremony, crowned Parthamaſpates king of Parthia, to the great joy of all his ſubjects. He eſtabliſhed another king alſo over the kingdom of Albania, near the Caſpian ſea. Then placing governors and lieutenants in other provinces, he reſolved to return to his capital in a more magnificent manner than any of his predeceſſors had done before him. He accordingly left Adrian general of all his forces in the eaſt; and continued his journey towards Rome, where the moſt magnificent preparations were made for his arrival. However, he had not got farther than the province of Cilicia, when he found himſelf too weak to proceed in his uſual manner. He therefore cauſed himſelf to be carried on ſhip-board to the city of Seleucia, where he died of the apoplexy, having been attacked by that diſorder once before. During the time of his indiſpoſition, his wife Plotina conſtantly attended near him; and, knowing the emperor's diſlike to Adrian, it is thought forged the will, by which he was adopted to ſucceed. Rome.

Trajan died in the 63d year of his age, after a reign of nineteen years ſix months and fifteen days. How highly he was eſteemed by his ſubjects appears by their manner of bleſſing his ſucceſſors, always wiſhing them the fortune of Auguſtus, and the goodneſs of Trajan. His military virtues, however, upon which he chiefly valued himſelf, produced no real advantages to his country; and all his conqueſts diſappeared, when the power was withdrawn that enforced them. 360. He dies, and is ſucceeded by Adrian.

Adrian was by deſcent a Spaniard, and his anceſtors were of the ſame city where Trajan was born. He was nephew to Trajan, and married to Sabina his grandniece. When Trajan was adopted to the empire, Adrian was a tribune of the army in Mæſia, and was ſent by the troops to congratulate the emperor on his advancement. However, his brother-in-law, who deſired to have an opportunity of congratulating Trajan himſelf, ſupplied Adrian with a carriage that broke down on the way. But Adrian was reſolved to loſe no time, and performed the reſt of the journey on foot. This aſſiduity was very pleaſing to the emperor; but he diſliked Adrian from ſeveral more prevailing motives. His kinſman was expenſive, and involved in debt. He was, beſides, inconſtant, capricious, and apt to envy another's reputation. Theſe were faults, that, in Trajan's opinion, could not be compenſated either by his learning or his talents. His great ſkill in the Greek and Latin languages, his intimate acquaintance with the laws of his country and the philoſophy of the times, were no inducement to Trajan, who, being bred himſelf a ſoldier, deſired to have a military man to ſucceed him. For this reaſon it was that the dying emperor would by no means appoint a ſucceſſor; fearful, perhaps, of injuring his great reputation, by adopting a perſon that was unworthy. His death, therefore, was concealed for ſome time by Plotina his wife, till Adrian had ſounded the inclinations of the army, and found them firm in his intereſts. They then produced a forged inſtrument, importing that Adrian was adopted to ſucceed in the empire. By this artifice he was elected by all orders of the ſtate, though then abſent from Rome, being left at Antioch as general of the forces in the eaſt.

Upon Adrian's election, his firſt care was to write the ſenate, excuſing himſelf for aſſuming the empire without their previous approbation; imputing it to the haſty zeal of the army, who rightly judged that the ſenate ought not long to remain without a head. He then began to purſue a courſe quite oppoſite to that of his predeceſſor, taking every method of declining war, and promoting the arts of peace. He was quite ſatisfied with preſerving the ancient limits of the empire, and ſeemed no way ambitious of extenſive conqueſt.

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Rome. For this reaſon he abandoned all the conquests which Trajan had made, judging them to be rather an inconvenience than an advantage to the empire; and made the river Euphrates the boundary of the empire, placing the legions along its banks to prevent the incurſions of the enemy.

He abandons the eaſtern conquests of Trajan.

Having thus ſettled the affairs of the eaſt, and leaving Severus governor of Syria, he took his journey by land to Rome, ſending the aſhes of Trajan thither by ſea. Upon his approach to the city, he was informed of a magnificent triumph that was preparing for him; but this he modeſtly declined, deſiring that thoſe honours might be paid to Trajan's memory which they had deſigned for him. In conſequence of this command, a moſt ſuperb triumph was decreed, in which Trajan's ſtatue was carried as a principal figure in the proceſſion, it being remarked that he was the only man that ever triumphed after he was dead. Not content with paying him theſe extraordinary honours, his aſhes were placed in a golden urn, upon the top of a column 140 feet high. On this were engraven the particulars of all his exploits in baſſo relievo; a work of great labour, and which is ſtill remaining. Theſe teſtimonies of reſpect to the memory of his predeceſſor did great honour to the heart of Adrian. His virtues, however, were contraſted by a ſtrange mixture of vices; or to ſay the truth, he wanted ſtrength of mind to preſerve his general rectitude of character without deviation. As an emperor, however, his conduct was moſt admirable, as all his public tranſactions appear dictated by the ſoundeſt policy and the moſt diſintereſted wiſdom. But theſe being already enumerated under the article ADRIAN, it would be ſuperfluous to repeat them in this place. He was ſucceeded by Marcus Antoninus, afterwards ſurnamed the *Pious*, whom he adopted ſome time before his death. See *ANTONINUS Pius*.

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Cauſes of the decline of the Roman empire.

From the beginning of the reign of Antoninus Pius, we may date the decline of the Roman empire. From the time of Caſar to that of Trajan, ſcarce any of the emperors had either abilities or inclination to extend the limits of the empire, or even to defend it againſt the barbarous nations who ſurrounded it. During all this ſpace, only ſome inconſiderable provinces to the northward of Italy, and part of the iſland of Britain, had been ſubjugated. However, as yet, nothing was loſt; but the degeneracy and corruption of the people had ſown thoſe ſeeds of diſſolution which the empire now began to feel. The diſorders were grown to ſuch an height that even Trajan himſelf could not cure them. Indeed his eaſtern conqueſts could ſcarce have been preſerved though the republic had been exiſting in all its glory; and therefore they were quietly reſigned by his ſucceſſor Adrian, as too diſtant, diſaffected, and ready to be over-run by the barbarous nations. The province of Dacia, being nearer to the centre of government, was more eaſily preſerved; and of conſequence remained for a long time ſubject to Rome. During the 23 years of the reign of Antoninus, few remarkable events happened. The hiſtorians of thoſe times are exceſſive in their praiſes of his juſtice, generoſity, and other virtues, both public and private. He put a ſtop to the perſecution of the Chriſtians, which raged in the time of Trajan and Adrian, and reduced the Brigantes, a tribe of Britons, who had revolted. However, during his reign, ſeveral calamities befel the empire. The Tiber, overflowing its banks, laid the lower part of Rome under water. The inundation was followed by a fire, and this by a famine, which ſwept off great numbers, though the emperor took the utmoſt care to ſupply the city from the moſt diſtant provinces. At the ſame time the cities of Narbonne in Gaul, and Antioch in Syria, together with the great ſquare in Carthage, were deſtroyed by fire; however, the emperor ſoon reſtored them to their former condition. He died in the year 160, univerſally lamented by his ſubjects, and was ſucceeded by Marcus Aurelius, ſurnamed the *Philoſopher*, whom he had adopted towards the latter end of his reign.

The tranſactions of this emperor the reader will find related under the article *ANTONINUS Philoſophus*, (A)

After

(A) As, after the death of Marcus Aurelius, the Roman empire declined very faſt, it may not be amiſs here to give ſome account of the military and other eſtabliſhments of the Roman emperors. Mr Gibbon obſerves that, in the times of the commonwealth, the uſe of arms was confined to thoſe who had ſome property to defend, and an intereſt in maintaining the laws which were propoſed to be enacted. But, as the public freedom declined and war became degraded into a trade, thoſe who had the property of the country choſe rather to hire others than to expoſe their own perſons, as is the caſe with our modern armies. Yet, even after all conſideration of property had been laid aſide among the common ſoldiers, the officers continued to be choſen from among thoſe who had a liberal education, together with a good ſhare of property. However as the common ſoldiers, in which the ſtrength of an army conſiſts, had now no more of that virtue called *patriotiſm*, the legions which were formerly almoſt invincible, no longer fought with the ſame ardour as before. In former times, the profeſſion of a ſoldier was more honourable than any other; but, when the ſoldiers came to be looked upon as hirelings, the honour of the profeſſion ſunk of courſe, and, by this means, one of the ſtrongeſt motives which the ſoldiers had to ſubmit to their ſevere diſcipline, and exert themſelves againſt their enemies, was removed. On the very firſt entrance of a ſoldier into the Roman ſervice, a ſolemn oath was adminiſtered to him, by which he engaged never to deſert his ſtandard; to ſubmit his own will to that of his leaders, and to ſacrifice his life for the ſafety of the emperor and the empire. The attachment which the Romans had to their ſtandards was indeed aſtoniſhing. The golden eagle, which appeared in the front of the legion, was almoſt an object of adoration with them: and it was eſteemed impious, as well as ignominious, to abandon that ſacred enſign in the time of danger. The centurions had a right to puniſh with blows, the generals with death; and it was an infallible maxim of the Roman diſcipline, that a good ſoldier ſhould dread his officers much more than the enemy.

Notwithſtanding all this, ſo ſenſible were the Romans of the inſufficiency of mere valour without ſkill, that military

Rome. After the death of Marcus Aurelius, his ſon Commodus ſucceeded to the imperial throne without oppoſition. He was in every reſpect unworthy of his father; and ſo prone to vice, that he was generally believed to have been the ſon, not of Marcus Aurelius, but of a celebrated gladiator, with whom the empreſs Fauſtina Rome.

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military exerciſes were the unremitted object of their diſcipline. The recruits and young ſoldiers were conſtantly trained both in the morning and evening; and even the veterans were not excuſed from the daily repetition of their exerciſe. Large ſheds were erected in the winter-quarters of the troops, that theſe uſeful labours might not be interrupted by tempeſtuous weather, and the weapons uſed in theſe imitations of war were always twice as heavy as thoſe made uſe of in real action. The ſoldiers were diligently inſtructed to march, to run, leap, ſwim, carry heavy burdens, and handle every ſpecies of weapon either for offence or defence; to form a variety of evolutions; and to move to the ſound of flutes in the pyrrhic or martial dance. It was the policy of the ableſt generals, and even of the emperors themſelves, to encourage theſe military ſtudies by their preſence and example; and we are informed that Adrian, as well as Trajan, frequently condeſcended to inſtruct the unexperienced ſoldiers, to reward the diligent, and ſometimes to diſpute with them the prize of ſuperior ſtrength and dexterity. Under the reigns of thoſe princes, the ſcience of tactics was cultivated with ſucceſs; and, as long as the empire retained any vigour, their military inſtructions were reſpected as the moſt perfect model of Roman diſcipline.

From the foundation of the city, as the Romans had in a manner been continually engaged in war, many alterations had taken place in the conſtitution of the legions. In the time of the emperors, the heavy-armed infantry, which compoſed its principal ſtrength, was divided into 10 cohorts and 55 companies, under the orders of a correſpondent number of tribunes and centurions. The firſt cohort, which always claimed the poſt of honour and the cuſtody of the eagle, was formed of 1105 ſoldiers, the moſt approved for valour and fidelity. The remaining nine cohorts conſiſted each of 555; and the whole body of legionary infantry conſiſted of 6100 men. Their arms were uniform, and excellently adapted to the nature of their ſervice; an open helmet with a lofty creſt; a breaſt-plate or coat of mail; greaves on their legs, and a large buckler of their left arm. Their buckler was of an oblong and concave figure, four feet in length, and two and an half in breadth; framed of a light wood, covered with a bull's hide, and ſtrongly guarded with braſs plates. Beſides a lighter ſpear, the legionary carried the pilum, a ponderous javelin about ſix feet long, and terminated by a maſſy triangular point of ſteel 18 inches in length. This weapon could do execution at the diſtance of 10 or 12 paces; but its ſtroke was ſo powerful, that no cavalry durſt venture within its reach, and ſcarce any armour could be formed proof againſt it. As ſoon as the Roman had darted his pilum, he drew his ſword, and ruſhed forward to cloſe with the enemy. It was a ſhort well-tempered Spaniſh blade with a double edge, and equally calculated for the purpoſes of puſhing and ſtriking; but the ſoldier was always inſtructed to prefer the former uſe of his own weapon, as his body remained thereby the leſs expoſed, while at the ſame time he inflicted a more dangerous wound on his adverſary. The legion was uſually drawn up eight deep; and the regular diſtance of three feet was left between the files and ranks. Thus the ſoldier poſſeſſed a free ſpace for his arms and motions; and ſufficient intervals were allowed, through which ſeaſonable reinforcements might be introduced to the relief of the combatants. The cavalry, without which the force of the legion remained imperfect, was divided into ten troops or ſquadrons: the firſt, as the companion of the firſt cohort, conſiſted of 132 men; whilſt each of the other nine amounted only to 66. The entire eſtabliſhment formed a body of 726 horſe, naturally connected with its reſpective legion; but occaſionally acting in the line, and compoſing a part of the wings of the army. The cavalry of the ancient republic was compoſed of the nobleſt youths of Rome and Italy, who, by performing their military ſervice on horſeback, prepared themſelves for the offices of ſenator and conſul; but after the alteration of manners and government which took place at the end of the commonwealth, the moſt wealthy of the equeſtrian order were engaged in the adminiſtration of juſtice and of the revenue; and, whenever they embraced the profeſſion of arms, they were immediately entruſted with a troop of horſe or a cohort of foot, and the cavalry, as well as the infantry, were recruited from the provinces. The horſes were bred for the moſt part in Spain, or in Cappadocia. The Roman troopers deſpiſed the complete armour which encumbered the cavalry of the eaſt. Inſtead of this, their arms conſiſted only of an helmet, an oblong ſhield, light boots, and a coat of mail. A javelin and a long broad ſword were their principal offenſive weapons. They ſeem to have borrowed the uſe of lances and iron maces from the barbarians.

Beſides the legionaries, the Romans, eſpecially in the times of the emperors, began to take auxiliaries into their pay. Conſiderable levies were regularly made among thoſe provincials who had not yet attained to the rank of Roman citizens. Many dependent princes and communities, diſperſed round the frontiers, were permitted, for a while, to hold their freedom and ſecurity by the tenure of military ſervice. Even ſelect troops of barbarians were compelled to enter into the ſervice; which was afterwards found to be a moſt deſtructive expedient, not only as it carried the Roman military ſkill among barbarians who were otherwiſe unacquainted with it, but it gave theſe auxiliaries themſelves frequent opportunities of revolting, and at laſt of dethroning the emperors at pleaſure, and even of overturning the empire itſelf. The number of auxiliaries was ſeldom interior to that of the legionaries themſelves. The braveſt and moſt faithful bands among them were placed under the command of prefects and centurions, and ſerverely trained in the arts of Roman diſcipline; but the far greater part retained thoſe arms which they had uſed in their native country. By this inſtitution, each legion, to whom a certain number of auxiliaries was allotted, contained within itſelf every ſpecies of lighter troops, and of miſſile weapons; and

Rome. ...tardia was ſuppoſed to be intimate. According to Mr Gibbon, however, Commodus was not, as has been repreſented, a tiger born with an inſatiate thirſt of human blood, and capable from his infancy of the moſt inhuman actions. Nature had formed him only a weak, rather than a wicked diſpoſition. His ſimplicity and timidity Rome.

and was capable of encountering every nation with the advantages of its reſpective arms and diſcipline. Nor was the legion deſtitute of what, in modern language, would be ſtyled a train of artillery. This conſiſted of 10 military engines of the largeſt ſize, and 56 ſmaller ones; but all of them, either in an oblique or horizontal manner, diſcharged ſtones and darts with irreſiſtible violence.

The camp of a Roman legion preſented the appearance of a fortified city. As ſoon as the ſpace was marked out, the pioneers carefully levelled the ground, and removed every impediment that might interrupt its perfect regularity. Its form was an exact quadrangle; and it may be computed that a ſquare of 700 yards was ſufficient for the encampment of 20,000 Romans, though a ſimilar number of modern troops would expoſe to the enemy a front of more than treble that extent. In the midſt of the camp, the prætorium, or general's tent, aroſe above the others; and the cavalry, infantry, and auxiliaries, had each their reſpective ſtations appointed them. The ſtreets were broad, and perfectly ſtraight; and a vacant ſpace of 200 feet was left on all ſides between the tents and rampart. The rampart itſelf was 12 feet high, armed with a line of ſtrong and intricate paliſades, and ſurrounded by a ditch 12 feet deep and as much broad. This labour was performed by the legions themſelves, to whom the uſe of the ſpade and the pick-ax was no leſs familiar than that of the ſword or plumb. Whenever the trumpet gave the ſignal of departure, the camp was almoſt inſtantly broke up, and the troops fell into their ranks without delay or confuſion. Beſides their arms, which the ſoldiers ſcarcely conſidered as an incumbrance, they were laden with their kitchen-furniture, the inſtruments of fortification, and proviſions for many days. Under this weight, which would oppreſs a modern ſoldier, they were taught to advance by a regular ſtep, near 20 miles in ſix hours. On the appearance of an enemy, they threw aſide their baggage, and, by eaſy and rapid evolutions, converted the column of march into an order of battle. The ſlingers and archers ſkirmiſhed in the front; the auxiliaries formed the firſt line, and were ſeconded or ſuſtained by the legions. The cavalry covered the flanks, and the military engines were placed in the rear.

The numbers of the Roman armies are not eaſily calculated with any tolerable accuracy. We may compute, however, that the legion, which conſiſted of 6831 Romans, might, with its attendant auxiliaries, amount to 12,500 men. The peace eſtabliſhment of Adrian and his ſucceſſors was compoſed of no fewer than 30 of theſe formidable brigades; and moſt probably formed an army of 370,000 men. Inſtead of being confined within the walls of fortified cities, which the Romans conſidered as the refuge of weakneſs or puſillanimity, the legions were encamped on the banks of the great rivers, and along the frontiers of the barbarians. Three legions were ſufficient for Britain. The principal ſtrength lay upon the Rhine and Danube, and conſiſted of 16 legions, diſpoſed in the following proportions: two in the Lower, and three in the Upper Germany; one in Rhætia; one in Noricum; four in Pannonia; three in Myſia; and two in Dacia. The defence of the Euphrates was intruſted to eight legions, ſix of whom were placed in Syria, and the other two in Cappadocia. With regard to Egypt, Africa, and Spain, as they were far removed from any important ſcene of war, a ſingle legion maintained the domeſtic tranquillity of each of theſe great provinces. Italy was defended by the city cohorts and prætorian guards formerly mentioned. They differed nothing from the legions in their arms and inſtitutions, except in a more ſplendid appearance, and a leſs rigid diſcipline.

The Roman navy, though ſufficient for every uſeful purpoſe of government, never ſeemed adequate to the greatneſs of the empire. The policy of the emperors was directed only to preſerve the peaceful dominion of the Mediterranean ſea, which was included within their dominions, and to protect the commerce of their ſubjects. Two permanent fleets were ſtationed by Auguſtus, one at Ravenna on the Adriatic, and the other at Miſenum in the bay of Naples. A very conſiderable force was alſo ſtationed at Frejus in Provence; and the Euxine was guarded by 40 ſhips and 3000 ſoldiers. To all theſe we may add the fleet which preſerved the communication between Gaul and Britain, and a great number of veſſels conſtantly maintained on the Rhine and Danube to harraſs the enemy, or intercept the paſſage of the barbarians. The whole military eſtabliſhment by ſea and land amounted to about 450,000 men.

It was not, however, to this formidable power alone that the empire owed its greatneſs. The policy of the Romans contributed much to its ſupport as the martial eſtabliſhment itſelf. According to Mr Gibbon, though the provinces might occaſionally ſuffer from the partial abuſe of delegated authority, the general principle of government was wiſe, ſimple, and beneficent. Among theſe beneficient principles he reckons that of univerſal toleration; but to this there were ſeveral exceptions: for the Britiſh Druids were perſecuted and deſtroyed by the Romans on account of their religion; the Egyptians and Jews were ſometimes perſecuted; and the Carthaginians were [illegible] and that even under the very beſt emperors, Trajan and Marcus Antoninus. However, as a very [illegible] religious [illegible] did take place under the heathen emperors of Rome, we muſt certainly [illegible] of the [illegible] of the proſperity of the empire.

Another thing which greatly contributed to the ſtrength and proſperity of the empire, was extending of the [illegible] of Rome to [illegible] people. "The wiſeſt policy (ſays Mr Gibbon) of preſerving, without any foreign mixture, the pure blood of the ancient citizens, had checked the fortune and haſtened the ruin of Athens and Sparta. Many ages after the extinction of the Athenian commonwealth, the inhabitants of cities deemed themſelves gradually [illegible] to [illegible]. Even the contrary, we ſhall [illegible] the Roman republic, we may

Rome. timidity rendered him the slave of his attendants, who gradually corrupted his mind. His cruelty, which at first obeyed the dictates of others, degenerated into habit, and at length became the ruling passion of his foul." But, however this may be, it is certain that the actions of this emperor were flagitious almost beyond a parallel.

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may discover, that notwithstanding the incessant demands of wars and colonies, the citizens, who, in the time of Servius Tullius, amounted to no more than 83,000, were multiplied, before the end of the social war, to the number of 463,000 men able to bear arms in the service of their country. When the allies of Rome claimed an equal share of honours and privileges, the senate preferred the chance of war to a concession; however, at last, all the Italian states, except the Samnites and Lucanians, were admitted into the bosom of the republic, and soon contributed to the ruin of public freedom. When the popular assemblies had been suppressed by the administration of the emperors, the conquerors were distinguished from the vanquished nations only as the first and most honourable order of subjects; and their increase, however rapid, was no longer exposed to the same dangers. Yet the princes who adopted the maxims of Augustus, guarded with the strictest care the dignity of the Roman name, and diffused the freedom of the city with a prudent liberality.

"Till the privileges of the Romans had been progressively extended to all the inhabitants of the empire, an important distinction was preserved between Italy and the provinces. The estates of the Italians were exempted from taxes, and their persons from the arbitrary jurisdiction of governors. From the foot of the Alps to the extremity of Calabria, all the natives of Italy were born citizens of Rome. The provinces of the empire were destitute of any public force or constitutional freedom. The free states and cities, which had embraced the cause of Rome, were insensibly sunk into real servitude. The public authority was every where engrossed by the ministers of the senate and of the emperors, and that authority was absolute. But the same salutary maxims of government which had secured the peace and obedience of Italy, were extended to the most distant conquests. A nation of Romans was gradually formed in the provinces, by the double expedient of introducing colonies, and of admitting the most faithful and deserving provincials to the freedom of Rome.

"So sensible were the Romans of the influence of language over national manners, that it was their most serious care to extend with the progress of their arms, the use of the Latin tongue. The eastern provinces, however, were less docile in this respect than the western ones; and this obvious difference made a distinction between the two portions of the empire, which became very remarkable when it began to decline. Nor was the influence of the Greek language and sentiments confined to the narrow limits of that once celebrated country. Their empire, by the progress of colonies and conquest, had been diffused from the Adriatic to the Euphrates and Nile. Asia was covered with Greek cities, and the long reign of the Macedonian kings had introduced a silent revolution into Syria and Egypt. In their pompous courts, those princes united the elegance of Athens with the luxury of the east; and the example of the court was imitated, at an humble distance, by the higher ranks of their subjects. Such was the general division of the Roman empire into the Latin and Greek languages; to which we may add a third distinction for the body of the natives in Syria, and especially in Egypt. The use of their ancient dialects, by secluding them from the commerce of mankind, checked the improvements of these barbarians. The slothful effeminacy of the former exposed them to the contempt, the sullen ferociousness of the latter excited the aversion, of the Roman conquerors. They seldom deserved or deserved the freedom of the city; and it is remarked, that more than 230 years elapsed after the ruin of the Ptolemies, before a native Egyptian was admitted into the senate of Rome.

"The number of subjects who acknowledged the laws of Rome, of citizens, of provincials, and of slaves, cannot now be fixed with such accuracy as the importance of the object would deserve. We are informed, that when the emperor Claudius exercised the office of censor, he took an account of 6,945,000 Roman citizens; who, with the proportion of women and children, must have amounted to about 20,000,000 of souls. The multitude of subjects of an inferior rank was uncertain and fluctuating; but after weighing with attention every circumstance which could influence the balance, it seems probable that there existed, in the time of Claudius, about twice as many provincials as there were Roman citizens, of either sex, and of every age: and that the slaves were at least equal in number to the free inhabitants of the Roman world. The total amount of this imperfect calculation would rise to about 120 millions of persons; a degree of population which possibly exceeds that of modern Europe, and forms the most numerous society that has ever been united under the same system of government.

"Domestic peace and union were the natural consequences of the moderate and comprehensive policy embraced by the Romans. The vanquished nations, blended into one great people, received the hope, nay even the wish, of resuming their independence, and scarcely considered their own existence as distinct from the existence of Rome. The established authority of the emperors pervaded, without an effort, the wide extent of their dominions, and was exercised with the same facility on the banks of the Thames, or of the Nile, as on those of the Tiber. The legions were destined to serve against the public enemy, and the civil magistrate seldom required the aid of a military force.

"It was scarcely possible that the eyes of contemporaries should discover in the public felicity the latent causes of decay and corruption. This long peace, and the uniform government of the Roman world, introduced a gradual and secret poison into the vitals of the empire. The minds of men were gradually reduced to the same level: the fire of genius was extinguished, and even the military spirit evaporated. The natives of Europe were numerous and robust. Spain, Gaul, Britain, and Illyricum, supplied the legions with excellent soldiers, and contented the

[illegible] very strange instances of his cruelty are related by the ancients. He is said to have cut [illegible] a corpulent man whom he saw walking along the street; partly, to try his own strength, in which he greatly excelled; and partly, as he himself owned, out of curiosity, to see his entrails drop out at once. He took pleasure in cutting off the feet, and putting out the eyes, of such as he met in his rambles through the city; telling the former, after he had thus maimed them, that now they belonged to the nation of *Monocoli*; and the latter, that they were now become *Luscini*, alluding to the word *luscus*, "one-eyed." Some he murdered because they were negligently dressed; others, because they seemed to be trimmed with too much nicety. He pretended to great skill in surgery, especially at letting blood: but sometimes, instead of curing by that means those whom he visited, or who were prevailed upon to recur to him, he cut off, by way of diversion, their ears and noses. His lewdness and debaucheries were equally remarkable, and equally infamous. However, he is said to have been exceedingly well skilled in archery, and to have performed incredible feats in that way. He excelled all men in strength; and is said to have run an elephant through with his spear, and to have killed in the amphitheatre one hundred lions, one after another, and each of them at one blow. Forgetful of his dignity, he entered the lists with the common gladiators, and came off conqueror 735 times: whence he often subscribed himself in his letters, *the conqueror of 1000 gladiators*.

[illegible] peace with [illegible]

The rest of the transactions of this reign were but very few. Soon after his father's death, Commodus concluded a peace with the Marcommanni, Quadi, &c. on the following conditions. 1. That they should not settle within five miles of the Danube. 2. That they should deliver up their arms, and supply the Romans with a certain number of troops when required. 3. That they should assemble but once a month, in one place only, and that in presence of a Roman centurion. 4. That they should not make war upon the Jazyges, Buri, or Vandals, without the consent of the people of Rome. On the other hand, Commodus promised to abandon, which he accordingly did, all the castles and fortresses held by the Romans in their country, excepting such as were within five miles of the Danube. With the other German nations, whom his father had almost entirely reduced, he concluded a very dishonourable peace; nay, of some he purchased it with large sums of money. Rome.

Soon after the return of the emperor to Rome, his sister Lucilla, perceiving that he was universally abhorred on account of his cruelty, formed a conspiracy against his life. Among the conspirators were many senators of distinction. It was agreed among them that they should fall upon the emperor while he was going to the amphitheatre through a narrow and dark passage; and that Claudius Pompeianus, to whom Lucilla had betrothed her daughter, should give the first blow. But he, instead of striking at once, showed him the naked dagger, and cried out, "This present the senate sends you:" so that the guards had time to rescue the emperor, and to seize the conspirators, who were soon after put to death. The emperor banished his sister to the island of Capreæ, where he soon after caused her to be privately murdered.

The favourite minister of Commodus was one Perennis;

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and strength of the monarchy. Their personal valour remained; but they no longer possessed that public courage which is nourished by the love of independence, the sense of national honour, the presence of danger, and the habit of command. They received laws and governors from the will of their sovereign, and trusted for their defence to a mercenary army. The posterity of their boldest leaders were contented with the rank of citizens, and subjects. The most aspiring spirits resorted to the court or standard of the emperors; and the provinces, deprived of political strength or union, insensibly sunk into the languid indifference of private life.

"The love of letters, almost inseparable from peace and refinement, was fashionable among the subjects of Adrian and the Antonines; who were themselves men of learning and curiosity. It was diffused over the whole extent of their empire; the most northern tribes of Britons had acquired a taste for rhetoric; Homer as well as Virgil were transcribed and studied on the banks of the Rhine and Danube; and the most liberal rewards sought out the faintest glimmerings of literary merit. The sciences of physic and astronomy were cultivated with some degree of reputation; but, if we except Lucian, an age of indolence passed away without producing a single writer of genius who deserved the attention of posterity. The authority of Plato, of Aristotle, of Zeno, and Epicurus, had reigned in the schools; and their systems, transmitted with blind deference from one generation of disciples to another, precluded every generous attempt to correct the errors or enlarge the bounds of the human mind. The beauties of the poets and orators, instead of kindling a fire like their own, produced only servile imitations; or, if any ventured to deviate from these models, they deviated at the same time from good sense and propriety. The provincials of Rome, trained by an uniform artificial education, were engaged in a very unequal competition with those bold ancients, who, by expressing their genuine feelings in their native tongue, had already occupied every place of honour. The name of *poet* was almost forgotten; that of *orator* was usurped by the sophists. A cloud of critics, of compilers, of commentators, darkened the face of learning, and the decline of genius was soon followed by the corruption of taste.

"Longinus observes and laments the degeneracy of his contemporaries, which debased their sentiments, enervated their courage, and depressed their talents; comparing them to pigmies, whose stature has been diminished by a constant pressure on their limbs. This diminutive stature of mankind was constantly sinking below the old standard, and the Roman world was indeed peopled by a race of pigmies; when the fierce giants of the north broke in and mended the puny breed. They restored a manly freedom; and, after the revolution of ten centuries, freedom became the happy parent of taste and science."

Rome. rennis; who in oppreſſion and cruelty ſeems to have been nothing inferior to thoſe of the moſt tyrannical emperors. During the firſt part of the reign of Commodus, he ruled with an abſolute ſway; but at laſt was torn in pieces by the enraged ſoldiery, whom he had offended by his too great ſeverity. He was ſucceeded in his place by a freedman named *Cleander*; for the emperor himſelf was ſo much taken up with his pleaſures, that he could not beſtow even a moment on the affairs of ſtate. The new miniſter abuſed his power in a more flagrant manner than even his predeceſſor had done. By him all things were openly ſet to ſale; offices, provinces, public revenues, juſtice, and the lives of men both innocent and guilty. The miniſter, who ruled the emperor without controul, infuſed ſuch terrors into his timorous mind, that he changed the captains of his guards almoſt continually. One Niger enjoyed the dignity only ſix hours; another only five days; and ſeveral others a ſtill ſhorter ſpace. Moſt of thoſe officers loſt their lives along with their employments; being accuſed of treaſon by Cleander, who continually ſolicited, and at laſt obtained, that important poſt for himſelf.

365 Revolt of Maternus.

In the year 187 happened a remarkable revolt. One Maternus, a common ſoldier, having fled from his colours, and being joined by many others guilty of the ſame crime, grew in a ſhort time ſo powerful, the banditti flocking to him from all parts, that he over-ran and plundered great part of Gaul and Spain; ſtormed the ſtrongeſt cities; and ſtruck the emperor and people of Rome with ſuch terror, that troops were raiſed, and armies diſpatched againſt him. Peſcennius Niger was ſent to make head againſt him in Gaul, where he became very intimate with Severus, who was then governor of Lyons, and who wrote a letter to the emperor, commending the prudent and gallant behaviour of Niger in purſuing the rebels. Maternus, finding himſelf reduced to great ſtraits, divided his men into ſeveral ſmall bands, and marched privately with them by different ways into Italy; having nothing leſs in view than to murder the emperor during the ſolemnity which was kept annually in honour of the mother of the gods, and on his death to ſeize upon the empire for himſelf. They all arrived at Rome undiſcovered; and ſeveral of his men had already mixed themſelves with the emperor's guards, when others of his own party betrayed him. He was immediately ſeized and executed; and his death put an end to the diſturbances which ſome of his followers had begun to raiſe in other provinces. In the ſame year broke out the moſt dreadful plague, ſays Dio Caſſius, that had been known. It laſted two or three years; and raged with the greateſt violence at Rome, where it frequently carried off 2000 perſons a-day. The following year a dreadful fire, which conſumed a great part of the city, was kindled by lightning; and at the ſame time the people were afflicted with a dreadful famine, occaſioned, according to ſome authors, by Cleander, who, having now in view nothing leſs than the ſovereignty itſelf, bought up underhand all the corn, in order to raiſe the price of it, and gain the affections of the ſoldiery and people by diſtributing it among them. Others tell us, however, that Papirius Dionyſius, whoſe province it was to ſupply the city with proviſions, contributed towards the famine, in order to make the people riſe againſt Cleander. Be this as it will, the populace aſcribed all their calamities to this hated miniſter; and one day, while the people were celebrating the Circaſſian games, a troop of children, having at their head a young woman of an extraordinary ſtature and fierce aſpect, entering the circus, began to utter aloud many bitter invectives and dreadful curſes againſt Cleander; which being for ſome time anſwered by the people with other invectives and curſes, the whole multitude roſe all of a ſudden, and flew to the place where Cleander at that time reſided with the emperor. There, renewing their invectives, they demanded the head of the miniſter who had been the occaſion of ſo many calamities. Hereupon Cleander ordered the prætorian cavalry to charge the multitude; which they did accordingly, driving them with great ſlaughter into the city. But the populace diſcharging ſhowers of ſtones, bricks, and tiles, from the tops of the houſes and from the windows, and the city-guards at the ſame time taking part with the people, the prætorian horſe were ſoon obliged to ſave themſelves by flight: nor was the ſlaughter ended till the emperor, appriſed of the tumult, cauſed the head of Cleander to be ſtruck off and thrown out to the enraged populace. The emperor himſelf did not long ſurvive Cleander; being cut off by a conſpiracy of Marcia his favourite concubine, Lætus captain of the guards, and Eclectus his chamberlain. Rome.

367 Commodus murdered.

No ſooner was the death of Commodus known, than the ſenate aſſembled, and declared him a public enemy, loading him with curſes, ordering his ſtatues to be broken to pieces, and his name to be raſed out of all public inſcriptions; and demanded his body, that it might be dragged through the ſtreets, and thrown into the Tiber. But Helvius Pertinax, whom the conſpirators had previouſly deſigned for the empire, and who had already aſſumed it, prevented ſuch an outrage, by letting the ſenators know that Commodus was already buried. This extraordinary perſonage had paſſed through many changes of fortune. He was originally the ſon of an enfranchiſed ſlave, called *Ælius*, who only gave him ſo much learning as to qualify him for keeping a little ſhop in the city. He then became a ſchoolmaſter, afterwards ſtudied the law, and after that became a ſoldier; in which ſtation his behaviour was ſuch as cauſed him to be ſoon made captain of a cohort againſt the Parthians. Being thus introduced to arms he went through the uſual gradation of military preferment in Britain and Mœſia, until he became the commander of a legion under Aurelius. In this ſtation he performed ſuch excellent ſervices againſt the barbarians, that he was made conſul, and ſucceſſively governor of Dacia, Syria, and Aſia Minor. In the reign of Commodus he was baniſhed; but ſoon after recalled, and ſent into Britain to reform the abuſes in the army. In this employment his uſual extraordinary fortune attended him: he was oppoſed by a ſedition among the legions, and left for dead among many others that were ſlain. However, he got over this danger, ſeverely puniſhed the mutineers, and eſtabliſhed regularity and diſcipline among the troops he was ſent to command. From thence he was removed into Africa, where the ſedition of the ſoldiers had like to have been as fatal to him as in his former government. Removing from Africa, and fatigued with an active life, he betook himſelf to retirement: but Commodus,

368 Pertinax raiſed to the empire.

Rome.

[illegible] skill in view, made him prefect of [illegible] when the [illegible] him as the proper person to succeed [illegible]

[illegible] Commodus only served to [illegible] as an object of his [illegible] the [illegible] repeated to [illegible] he [illegible] Upon [illegible] Pertinax, without any show of [illegible] he had expected [illegible] that the emperor had [illegible] However, he was not [illegible] real cause of [illegible] being [illegible] to accept of the [illegible] with their offer.

[illegible] the camp, Pertinax was proclaim[illegible] the senate [illegible] being [illegible] the death of the former. The [illegible] of Rome; [illegible] with [illegible] satisfaction to [illegible] in the 66th year of his age.

Nothing could exceed the wisdom and justice of this monarch's reign the short time it continued. He pu[illegible] who had served to corrupt the late emperor [illegible] to public [illegible] He attempted to restrain the licentiousness of the prætorian bands, and put a stop to the injuries and insolences they committed against the people. He sold [illegible] of Commodus as slaves; particularly such as had obscene names. He continually frequented the senate as often as it sat, and never refused an audience even to the meanest of the people. His success in foreign affairs was equal to his internal [illegible] When the barbarous nations abroad had certain intelligence that he was emperor, they immediately laid down their arms, well knowing the opposition they were to expect from so experienced a commander. His great error was avarice; and that, in some measure, served to hasten his ruin.

The prætorian soldiers, whose manners he had attempted to reform, having been long corrupted by the indulgence and profusion of their former monarchs, began to hate him for the parsimony and discipline he had introduced among them. They therefore resolved to dethrone him; and for that purpose declared Materna[illegible] emperor, and endeavoured to carry him to the camp to proclaim him. Materna[illegible] however, was [illegible] to the [illegible] of Pertinax, and [illegible] to consent to their [illegible] [illegible] out of the [illegible] to the emperor, and then out of the city. They [illegible] another senator; [illegible] the senate would have [illegible] for execution, had not Pertinax interposed, who declared that during his reign no senator should suffer death.

[illegible] The prætorian soldiers then resolved unanimously not to use any secret conspiracies, or private contrivances, but boldly to seize upon the emperor and empire at once. They accordingly, in a tumultuous manner, marched through the streets of Rome, and entered the palace without opposition. Such was the terror at their approach, that the greatest part of the emperor's attendants forsook him; while those who remained earnestly intreated him to fly to the body of the people, and interest them in his defence. However, he rejected their advice; declaring, that it was unworthy his imperial dignity, and all his past actions, to save himself by flight. Having thus resolved to face the rebels, he had some hopes that his presence alone would terrify and confound them. But what could his former virtues, or the dignity of command, avail against a tumultuous rabble, nursed up in vice and ministers of former tyranny? One Taurinus, a Tungrian, struck him with his lance on the breast, crying out, "The soldiers send you this." Pertinax, seeing all was over, covered his head with his robe, and sunk down, mangled with a multitude of wounds, which he received from various assassins. Eclectus, and some more of his attendants, who attempted to defend him, were also slain: his son and daughter only escaped, who happened to be lodged out of the palace. Thus, after a reign of three months, Pertinax fell a sacrifice to the licentious fury of the prætorian army. From the number of his adventures, he was called the *tennis-ball of fortune*; and certainly no man ever experienced such a variety of situations with so blameless a character.

371 The empire exposed to sale, and bought by Didius Julianus.

The soldiers having committed this outrage, retired with great precipitation; and getting out of the city to the rest of their companions, expected tiously fortified their camp, expecting to be attacked by the citizens. Two days having passed without any attempt of this kind, they became more insolent; and willing to make use of the power of which they found themselves possessed, made proclamation, that they would sell the empire to whoever would purchase it at the highest price. In consequence of this proclamation, so odious and unjust, only two bidders were found; namely, Sulpicianus and Didius Julianus: The former, a consular person, prefect of the city, and son-in-law to the late emperor Pertinax; the latter, a consular person likewise, a great lawyer, and the wealthiest man in the city. He was sitting with some friends at dinner when the proclamation was published; and being charmed with the prospect of unbounded power, immediately rose from table and hastened to the camp. Sulpicianus was got there before him; but as he had rather promises than treasure to bestow, the offers of Didius, who produced immense sums of ready money, prevailed. He was received into the camp by a ladder, and they instantly swore to obey him as emperor. From the camp he was attended by his new electors into the city; the whole body of his guards, which consisted of 16,000 men, ranged around him in such order as if they had prepared for battle, and not for a peaceful ceremony. The citizens, however, refused to confirm his election; but rather cursed him as he passed. Upon being conducted to the senate-house, he addressed the few senators that were present in a very laconic speech: "Fathers, you want an emperor; and I am the fittest person you can choose." But even this, short as it seems, was unnecessary, since the senate had it not in their power to refuse their approbation. His speech being backed by the army, to whom he had given about a million of sterling, succeeded. The choice of the soldiers was confirmed by the senate, and Didius was acknowledged emperor, now in the 57th year of his age.

It should seem by this weak monarch's conduct when seated

Rome. seated on the throne, that he thought the government of an empire rather a pleasure than a toil. Instead of attempting to gain the hearts of his subjects, he gave himself up to ease and inactivity, utterly regardless of the duties of his station. He was mild and gentle indeed; neither injuring any nor expecting to be injured. But that avarice, by which he became opulent, still followed him in his exaltation; so that the very soldiers who elected him, soon began to detest him for those qualities, so very opposite to a military character. The people also, against whose consent he was chosen, were no less inimical. Whenever he issued from his palace, they openly poured forth their imprecations against him; crying out, that he was a thief, and had stolen the empire. Didius, however, in the true spirit of a trader, patiently bore it all; sometimes beckoning them with smiles to approach him, and testifying his regard by every kind of submission.

372 Pescennius Niger and Septimius Severus assume the empire.

While Didius was thus contemptuously treated at home, two valiant generals, in different parts of the empire, disclaimed his authority, and boldly resolved to attempt the throne for themselves. These were, Pescennius Niger, governor of Syria; and Septimius Severus, commander of the German legions. Niger was beloved by the people for his clemency and valour; and the report of his proposing Pertinax for his model, and resolving to revenge his death, gained him universal esteem among the people. Being thus apprised of their inclinations, he easily induced his army in Syria to proclaim him emperor; and his title was, shortly after, acknowledged by all the kings and potentates in Asia, who sent their ambassadors to him as their lawful prince. The pleasure of being thus treated as a monarch, in some measure retarded his endeavours to secure his title. Entirely satisfied with the homage of those about him, he neglected the opportunities of suppressing his rivals; and gave himself up to luxury and feasting at Antioch. The conduct of Severus, an African by birth, was very different. Being proclaimed by his army, he began by promising to revenge the death of Pertinax, and took upon him his name. He next secured the fidelity of all the strong places in his province; and then resolved, with the utmost expedition, to march with his whole force directly to Rome.

373 Julianus deposed and put to death.

In the mean time, Didius, who disregarded the attempts of Niger, was greatly alarmed at those of Severus. He first, with many solicitations, procured the senate to proclaim him a traitor. He then applied himself to make the necessary provisions to oppose him, in which he found nothing but disappointment. The cohorts that elected him were enervated by vice and luxury; the people detested his cause; and the cities of Italy had long been disused to the arts of war. Some advised him to march forward, and meet Severus as he was crossing the Alps: others were for sending the generals upon that expedition. The unfortunate Didius, unequal to the task of empire, and quite confounded with the multiplicity of counsel, could take no other resolution but that of awaiting his rival's coming at Rome. Accordingly, soon after being informed of his approach, he obtained the consent of the senate to send his ambassadors, offering to make him a partner of the empire. But Severus rejected this offer, conscious of his own strength, and of the weakness of the proposer. The senate soon appeared of the same sentiments; and perceiving the timidity and weakness of their present Rome. master, began to abandon him, alleging, that he who could not defend the empire was not worthy to govern it. Didius vainly endeavoured to reduce them to their duty, first by intreaties, and then by threats; but these only served to hasten his destruction. The senate being called together, as was formerly practised in the times of the commonwealth by the consuls, they unanimously decreed, That Didius should be deprived of the empire, and that Severus should be proclaimed in his stead. They then commanded Didius to be slain; and sent messengers for this purpose to the palace, where they found him disarmed, and weeping among a few friends that still adhered to his interest. When the executioners began to prepare for their fatal errand, he expostulated with them, demanding what crime he had committed? He could not be persuaded to think, that paying his money, and receiving an empire in exchange, deserved so severe a punishment. The executioners, however, were neither able nor willing to enter into the merits of the cause; they presently led him into the secret baths of the palace, and obliging him to stretch his neck forwards, after the manner of condemned criminals, struck off his head, and placed it up in those courts where he had formerly pleaded with great success.

374 Severus declared emperor.

The senate having thus dispatched Didius, sent ambassadors to Severus, yielding him obedience, granting him the ensigns and the usual titles of empire, and informing him of the death of Didius. Severus, who was now about 47 years of age, received them with all proper respect; and entertaining them honourably continued his march towards Rome. As he came near the city, his first exertion of power was, to have all the prætorian soldiers who had lately sold the empire come forth unarmed to meet him. These, though sensible of their danger, had no other resource left but compliance; and accordingly came forward with branches of laurel, as if to welcome his approach. Severus, however, soon showed how little capable their present submission was to atone for their past offences: after upbraiding them, in a short speech, with all their crimes, he commanded them to be instantly stripped of their military habits, deprived of the name and honour of soldiers, and banished 100 miles from Rome. He then entered the city in a military manner, took possession of the palace, and promised the senate to conduct himself with clemency and justice. However, though he united great vigour with the most refined policy, yet his African cunning was considered as a particular defect in him. He is celebrated for his wit, learning, and prudence; but equally blamed for infidelity and cruelty. In short, he seemed alike disposed to the performance of the greatest acts of virtue and the most bloody severities. He began his command, by seizing all the children of such as had employments or authority in the east, and detained them as pledges for their fathers loyalty. He next supplied the city with corn; and then with all possible expedition marched against Niger, who was still considered and honoured as emperor of the east.

375 Niger defeated.

One of the chief obstacles to his march was, the leaving behind him Clodius Albinus, commander of the forces and legions in Britain, whom he by all means wished to secure in his interests. For this end, he endeavoured to

prevail.

Rome. ...proof upon him, by giving him hopes of ſucceeding to the empire; inſinuating, that he himſelf was declining, and his children were as yet but infants. To deceive him ſtill further, he wrote in the ſame ſtyle to the ſenate, gave him the title of *Cæſar*, and ordered money to be coined with his image. Theſe artifices ſerving to lull Albinus into a ſtate of ſecurity, Severus marched againſt Niger with all his forces. After ſome indeciſive combats, the laſt great battle that was fought between theſe extraordinary men was upon the plains of Iſſus, on the very ſpot where Alexander had formerly conquered Darius. Beſides the two great armies drawn up on the plain, the neighbouring mountains were covered with infinite numbers of people, who were merely led by curioſity to become ſpectators of an engagement that was to determine the empire of the world. Severus was conqueror; and Niger's head being ſtruck off by ſome ſoldiers of the conquering army, was inſultingly carried through the camp on the point of a lance.

This victory ſecured Severus in the poſſeſſion of the throne. However, the Parthians, Perſians, and ſome other neighbouring nations, took up arms, under a pretence of vindicating Niger's cauſe. The emperor marched againſt them in perſon, had many engagements with them, and obtained ſuch ſignal victories over them, as enlarged the empire, and eſtabliſhed peace in the eaſt.

Albinus declared enemy to Severus. Niger being no more, Severus now turned his views againſt Albinus, whom he reſolved by every means to deſtroy. For this purpoſe he ſent aſſaſſins into Britain, under a pretence of bringing him letters, but in reality to diſpatch him. Albinus being appriſed of their deſigns, prevented their attempt by recurring to open force and proclaiming himſelf emperor. Nor was he without a powerful army to ſupport his pretenſions; of which Severus being ſenſible, bent his whole force to oppoſe him. From the eaſt he continued his courſe acroſs the ſtraits of Byzantium, into the moſt weſtern parts of Europe, without intermiſſion. Albinus being informed of his approach, went over to meet him with his forces into Gaul; ſo that the campaign on both ſides was carried on with great vigour. Fortune ſeemed for a while variable; but at laſt a deciſive engagement came on, which was one of the moſt deſperate recorded in the Roman hiſtory. It laſted from morning till night, without any ſeeming advantage on either ſide; at length the troops of Severus began to fly, and he himſelf happening to fall from his horſe, the army of Albinus cried out, Victory. But the engagement was ſoon renewed with vigour by Lætus, one of Severus's commanders, who came up with a body of reſerve, deſigning to deſtroy both parties and make himſelf emperor. This attempt, though deſigned againſt both, turned out entirely to the advantage of Severus. He therefore again charged with ſuch fury and exactneſs, that he ſoon plucked the victory from thoſe who but a ſhort time before ſeemed conquerors; and purſuing them into the city of Lyons, took Albinus priſoner, and cut off his head; treating his dead body with inſults that could only flow from a mean and revengeful temper. All the ſenators who were ſlain in battle he ordered to be quartered, and ſuch as were taken alive were immediately executed.

Having thus ſecured himſelf in poſſeſſion of the empire, upon his return to Rome he loaded his ſoldiers with rewards and honours; giving them ſuch privileges as ſtrengthened his own powers while they deſtroyed that of the ſtate. For the ſoldiers, who had hitherto ſhowed the ſtrongeſt inclination to an abuſe of power, were now made arbiters of the fate of emperors; and we ſhall henceforward behold them ſetting them up, and dethroning them, at pleaſure. Rome.

Being thus ſecure of his army, he reſolved to give way to his natural turn for conqueſt, and to oppoſe his arms againſt the Parthians, who were then invading the frontiers of the empire. Having therefore previouſly given the government of domeſtic policy to one Plautianus, a particular favourite of his, to whoſe daughter he married his ſon Caracalla, he ſet out for the eaſt, and proſecuted the war with his uſual expedition and ſucceſs. He forced ſubmiſſion from the king of Armenia, deſtroyed ſeveral cities in Arabia Felix, landed on the Parthian coaſts, took and plundered the famous city Cteſiphon, marched back through Paleſtine and Egypt, and at length returned to Rome in triumph.

During this interval, Plautianus, who was left to direct the affairs of Rome, began to think of aſpiring to the empire himſelf. Upon the emperor's return, he employed a tribune of the prætorian cohorts, of which he was the commander, to aſſaſſinate him, as likewiſe his ſon Caracalla. The tribune ſeemed cheerfully to undertake this dangerous office; but inſtead of going through with it, informed Severus of his favourite's treachery. He at firſt received it as an improbable ſtory, and as the artifice of ſome one who envied his favourite's fortune. However, he was at laſt perſuaded to permit the tribune to conduct Plautianus to the emperor's apartments. With this intent, the tribune went and amuſed him with a pretended account of his killing the emperor and his ſon, deſiring him, if he thought it fit to ſee them dead, to come with him to the palace. As Plautianus ardently deſired their deaths, he readily gave credit to this relation; and following the tribune, he was conducted at midnight into the innermoſt receſſes of the palace. But what muſt have been his diſappointment, when, inſtead of finding the emperor lying dead, as he expected, he beheld the room lighted up with torches, and Severus, ſurrounded by his friends, prepared in array to receive him. Being aſked by the emperor, with a ſtern countenance, what had brought him there at that unſeaſonable time? he was at firſt utterly confounded; wherefore, not knowing what excuſe to make, he ingenuouſly confeſſed the whole, intreating forgiveneſs for what he had intended. The emperor ſeemed in the beginning inclined to pardon; but Caracalla his ſon, who from the earlieſt age ſhowed a diſpoſition to cruelty, ſpurned him away in the midſt of his ſupplications, and with his ſword ran him through the body.

Severus having eſcaped this danger, ſpent a conſiderable time in viſiting ſome cities in Italy, permitting none of his officers to ſell places of truſt or dignity, and diſtributing juſtice with the ſtricteſt impartiality. He took ſuch an exact order in managing his exchequer, that, notwithſtanding his great expences, he left more money behind him than any of his predeceſſors. His armies alſo were kept upon the moſt reſpectable footing; ſo that he feared no invaſion. Being equally attentive to the preſervation of all parts of the empire, he reſolved to make his laſt expedition into Britain, where

Rome.

where the Romans were in danger of being deſtroyed, or compelled to fly the province. Wherefore, after appointing his two ſons Caracalla and Geta joint ſucceſſors in the empire, and taking them with him, he landed in Britain, to the great terror of ſuch as had drawn down his reſentment. Upon his progreſs into the country, he left his ſon Geta in the ſouthern part of the province, which had continued in obedience, and marched with his ſon Caracalla againſt the Caledonians. In this expedition, his army ſuffered prodigious hardſhips in purſuing the enemy; they were obliged to hew their way through intricate foreſts, to drain extenſive marſhes, and form bridges over rapid rivers; ſo that he loſt 50,000 men by fatigue and ſickneſs. However, he ſupported all theſe inconveniences with the greateſt bravery; and is ſaid to have proſecuted his ſucceſſes with ſuch vigour, that he compelled the enemy to ſue for peace; which they obtained, not without the ſurrender of a conſiderable part of their country. We muſt here obſerve, however, that the Picts and Caledonians are ſo often confounded together by hiſtorians, that many miſtakes have thence ariſen concerning the progreſs and conqueſts of the Romans in the north of Britain. But from the boundary formed by the famous wall of Severus (ſee *Severus's Wall*), we muſt conclude, that no part of Caledonia, properly ſo called, had been either on this or any other occaſion ceded to him; and there is reaſon to believe, that he rather received checks from the people of that territory, than was ever able to make any conſiderable impreſſion upon them. Be this, however, as it may, after having made peace, and built his wall, he retired to York; where, partly through age and fatigue, and partly through grief at the irreclaimable life of Caracalla, he found himſelf daily declining, having already loſt the uſe of his feet. To add to the diſtreſs of his ſituation, he was informed that the ſoldiers had revolted, and declared his ſon emperor. In this exigence, he ſeemed once more to recal his natural vigour; he got himſelf immediately put into his litter, and commanded the new emperor, with the tribunes and centurions, to be brought before him. Though all were willing to court the favour of the young emperor, ſuch was the authority of Severus, that none dared to diſobey. They appeared before him confounded and trembling, and implored pardon upon their knees. Upon which, putting his hand to his head, he cried out, "Know, that it is the head that governs, and not the feet." However, ſoon perceiving his diſorder to increaſe, and knowing that he could not outlive it, he called for poiſon; which being refuſed him, he loaded his ſtomach with food; which not being able to digeſt, it ſoon brought him to his end, in the 56th year of his age, after an active though cruel reign of about 18 years.

376 Expedition of Severus into Britain.

377 Severus dies.

378 Caracalla and Geta ſucceed.

Caracalla and Geta being acknowledged as emperors by the army, began to ſhow a mutual hatred to each other even before their arrival at Rome. Their only agreement was, in reſolving to deify Severus their father; but ſoon after, each fought to attach the ſenate and army to his own particular intereſt. They were of very oppoſite diſpoſitions: Caracalla was fierce and cruel to an extreme degree; Geta was mild and merciful; ſo that the city ſoon found the dangerous effects of being governed by two princes of equal power and contrary inclinations.

But this oppoſition was of no long continuance; for Caracalla being reſolved to govern alone, furiouſly entered Geta's apartment, and, followed by ruffians, ſlew him in his mother's arms. Having committed this deteſtable murder, he iſſued with great haſte from the palace, crying out, That his brother would have ſlain him; and that he was obliged, in ſelf-defence, to retaliate the intended injury. He then took refuge among the prætorian cohorts, and in a pathetic tone began to implore their aſſiſtance, ſtill making the ſame excuſe for his conduct. To this he added a much more prevailing argument, promiſing to beſtow upon them the largeſſes uſually given upon the election of new emperors, and diſtributing among them almoſt all the treaſures which had been amaſſed by his father. By ſuch perſuaſives the ſoldiers did not heſitate to proclaim him ſole emperor, and to ſtigmatize the memory of his brother Geta as a traitor and an enemy to the commonwealth. The ſenators were ſoon after induced, either through favour or fear, to approve what had been done by the army: Caracalla wept for the death of his brother whom he had ſlain; and, to carry his hypocriſy to the utmoſt extreme, ordered him to be adored as a god.

Rome.

379 Geta murdered by Caracalla.

Being now emperor, he went on to mark his courſe with blood. Whatever was done by Domitian or Nero fell ſhort of this monſter's barbarities. Lætus, who firſt adviſed him to murder his brother, was the firſt who fell a ſacrifice to his jealouſy. His own wife Plautina followed. Papinian, the renowned civilian, was beheaded for refuſing to write in vindication of his cruelty; anſwering the emperor's requeſt, by obſerving, That it was much eaſier to commit a parricide than to defend it. He commanded all governors to be ſlain that his brother had appointed; and deſtroyed not leſs than 2000 perſons who had adhered to his party. Whole nights were ſpent in the execution of his bloody decrees; and the dead bodies of people of all ranks were carried out of the city in carts, where they were burnt in heaps, without any of the ceremonies of a funeral. Upon a certain occaſion, he ordered his ſoldiers to ſet upon a crowded audience in the theatre, only for diſcountenancing a charioteer whom he happened to favour. Perceiving himſelf hated by the people, he publicly ſaid, that he could inſure his own ſafety though not their love; ſo that he neither valued their reproaches nor feared their hatred.

380 Who proves a moſt bloody tyrant.

This ſafety which he ſo much built upon was placed in the protection of his ſoldiers. He had exhauſted the treaſury, drained the provinces, and committed a thouſand acts of rapacity, merely to keep them ſtedfaſt in his intereſts; and being diſpoſed to truſt himſelf with them particularly, he reſolved to lead them upon a viſit through all the provinces of the empire. He firſt went into Germany; where, to oblige the natives, he dreſſed himſelf in the habit of their country. From thence he travelled into Macedonia, where he pretended to be a great admirer of Alexander the Great; and among other extravagancies cauſed a ſtatue of that monarch to be made with two faces; one of which reſembled Alexander and the other himſelf. He was ſo corrupted by flattery, that he called himſelf *Alexander*; walked as he was told that monarch had walked; and, like him, bent his head to one ſhoulder. Shortly after, arriving at Leſſer Aſia and the ruins of Troy, as he was

381 His extravagant folly, cruelty, and treachery.

Rome. was viewing the tomb of Achilles, he took it into his head to resemble that hero; and one of his freedmen happening to die at that time, he ordered the funeral ceremonies that were performed at the tomb of Patroclus. Passing thence into Egypt, he made himself the most terrible master the inhabitants of Alexandria, in accordance the name they had given him, by exciting against the unarmed Alexandrians.

Going from thence into Syria, he invited Artabanus king of Parthia to a conference: desiring his daughter in marriage, and promising him the most honourable conditions. In consequence of this, that king marched to the place appointed, with a numerous attendance of his nobility. This was what Caracalla desired. Persuaded of his power, or the fidelity of his troops, he privately ordered his own armed troops, like wild beasts among unarmed sheep, to make a most terrible slaughter among them: Artabanus himself escaping with the utmost difficulty. For this victory he obtained from the senate the honorary name of *Parthicus*.

382 Macrinus, being a man of mean birth, is raised to the throne.

Upon returning towards Rome, it would seem as if his vices were inexhaustible; for having been guilty of parricide, he now resolved to marry the mother of Geta whom he had slain. It happened that one day seeing her drop her veil, which discovered her naked bosom, which was extremely beautiful, he told her, that he would punish those charms if beheld, if it were lawful. To this unnatural request she hesitated not to answer, that he might enjoy all things who possessed all. Whereupon, setting aside all duty and respect for his deceased father, he celebrated his nuptials with her in public, totally disregarding the censures and the screams of mankind.

However, though he disregarded shame, he was not insensible to fear. He was ever uneasy in the consciousness of being universally hated; and was continually consulting astrologers concerning what death he should die. Among others, he sent one of his confidants, named *Maternianus*, with orders to consult all the astrologers in the city concerning his end. Maternianus considered this as a proper time to get rid of Macrinus, the emperor's principal commander in Mesopotamia; a man who was daily supplanting him in his master's favour. He therefore informed him by letter, as if from the astrologers, that Macrinus had a design against his life; and they consequently advised him to put the conspirator to death. This letter was sent sealed, and made up, among many others, to be conveyed with the greatest secrecy, and delivered to the emperor as he was preparing for a race. However, as it never was his custom to interrupt his pleasures for his business, he gave the packet to Macrinus to read over, and to take whatever the contents should require. It presently happened when Macrinus came to that which regarded himself, he was unable to contain his surprise and fear. His first care was, to remove the letter from the sight of himself, and to acquaint the emperor with the purport of the rest. He then began to consult the most probable means of compassing his death; and at length resolved to employ Martialis, a man of great resolution, and a soldier of long standing, who hated the emperor himself, more particularly for the death of his brother, whom Caracalla had ordered to be slain. Him therefore Macrinus exhorted to revenge his brother's death, by killing the tyrant, which he might easily effect, as being always so near his person. Martialis readily undertook the dangerous task; being willing to meet death himself, so he might obtain his desire of seeing the tyrant expire before him. Accordingly, as the emperor was riding out one day near a little city called *Carræ*, he happened to withdraw himself privately, upon a natural occasion, with only one page to hold his horse. This was the opportunity Martialis had so long and ardently desired; wherefore running to him as if he had been called, he stabbed the emperor in the back, so that he died immediately. Martialis unconcernedly returned to his troop; but retiring by insensible degrees, he endeavoured to secure himself by flight. But his companions soon missed him, and the page giving information of what had been done, he was pursued by the German horse and cut in pieces. 383 He is murdered.

During the reign of this execrable tyrant, which continued six years, the empire was every day declining; the soldiers were entirely masters of every election; and as there were various armies in different parts, so there were as many interests all opposite to each other. Caracalla, by satisfying their most unreasonable appetites, destroyed all discipline among them, and all subordination in the state.

383 Macrinus succeeds.

The soldiers, now without an emperor, after a suspense of two days, fixed upon Macrinus, who took all possible methods to conceal his being privy to Caracalla's murder. The senate confirmed their choice shortly after; and likewise that of his son Diadumenus, whom he took as a partner in the empire. Macrinus was 53 years old when he entered upon the government of the empire. He was of obscure parentage; some say by birth a Moor, who by the mere rotation of office, being first made prefect of the prætorian bands, was now, by treason and accident, called to fill the throne. We are told but little of this emperor, except his engaging in a bloody though undecided battle with Artabanus king of Parthia, who came to take vengeance for the injury he had sustained in the late reign: however, this monarch finding his real enemy dead, was content to make peace, and returned into Parthia. Something is also said of the severity of this emperor's discipline; for to such a pitch of licentiousness was the Roman army now arrived, that the most severe punishments were unable to restrain the soldiers; and yet the most gentle inflictions were looked upon as severity. It was this rigorous discipline, together with the artifices of Mæa, grandmother to Heliogabalus the natural son of Caracalla, that caused the emperor's ruin. Heliogabalus was priest of a temple dedicated to the Sun, in Emesa, a city of Phœnicia; and though but 14 years old was greatly loved by the army for the beauty of his person, and the memory of his father, whom they still considered as their great benefactor. This was soon perceived by the grandmother; who having very rich in gold and jewels, gave liberal presents among them, while they repaired to the temple, both from the garrison of the city and the camp of Raphanea. This not receiving sufficiently more reason, the soldiers, being disgusted with the severities of their present emperor, came to think of the young Heliogabalus in his stead. Accordingly, sending for him 384 Heliogabalus raises a rebellion against him.

Rome. to their camp, he was immediately proclaimed; and such were the hopes of his virtues, that all men began to affect his interests.

Macrinus, who at this time was pursuing his pleasures at Antioch, gave but little attention to the first report; only sending his lieutenant Julian, with some legions, to quell the insurrection. However, these, like the rest, soon declared for Heliogabalus, and slew their general. It was then that Macrinus found he had treated the rebellion too slightly; he therefore resolved, with his son, to march directly against the seditious legions, and force them to their duty. Both parties met on the confines of Syria: the battle was for some time furious and obstinate; but at last Macrinus was overthrown, and obliged to seek safety by flight. His principal aim was to get to Rome, where he knew his presence was desired; wherefore he travelled through the provinces of Asia Minor with the utmost expedition and privacy, but unfortunately fell sick at the city of Chalcedon. There those who were sent in pursuit, overtook and put him to death, together with his son Diadumenus, after a short reign of one year and two months.

385 Macrinus defeated, and put to death.

The senate and citizens of Rome being obliged to submit to the appointment of the army as usual, Heliogabalus ascended the throne at the age of 14. One at so early an age, invested with unlimited power, and surrounded with flatterers, could be expected to act only as they thought proper to direct. This young emperor was entirely led by them; and being sensible that it was in his power to indulge all his appetities, he studied only their gratification. As he is described by historians, he appears a monster of sensuality. His short life therefore is but a tissue of effeminacy, lust, and extravagance. He married, in the small space of four years, six wives, and divorced them all. He built a temple to the sun; and willing that his god should have a wife as well as himself, he married him to Pallas, and shortly after to the moon. His palace was a place of rendezvous for all the prostitutes of Rome, whom he frequently met naked, calling them *his fellow soldiers, and companions in the field.* He was so fond of the sex, that he carried his mother with him to the senate-house, and demanded that she should always be present when matters of importance were debated. He even went so far as to build a senate-house for women, with suitable orders, habits, and distinctions, of which his mother was made president. They met several times; all their debates turning upon the fashions of the day, and the different formalities to be used in giving and receiving visits. To these follies, he added great cruelty and boundless prodigality; so that he was heard to say, that such dishes as were cheaply obtained were scarce worth eating. His suppers therefore generally cost 6000 crowns, and often 60,000. He was always dressed in cloth of gold and purple, enriched with precious stones, and yet never wore the same habit twice. His palace, his chambers, and his beds, were all furnished of the richest stuffs, covered with gold and jewels. Whenever he took horse, all the way between his appartment and the place of mounting was covered with gold and silver dust strewn at his approach.

386 Heliogabalus worse than any of his predecessors.

These excesses were soon perceived by his grandmother Mæsa, whose intrigues had first raised him to the throne: so that she thought to lessen his power by dividing it. For this purpose, under a pretence of freeing him from the cares of public business, she persuaded him to adopt his cousin-german, Alexander, as his successor; and likewise to make him his partner in the consulship. Heliogabalus, having thus raised his cousin, had scarce given him his power, when he wished again to take it away; but the virtues of this young prince had so greatly endeared the people and the army to him, that the attempt had like to have been fatal to the tyrant himself. The prætorian soldiers mutinying, attempted to kill him as he was walking in his gardens; but he escaped, by hiding himself from their fury. However, upon returning to their camp, they continued the sedition; requiring that the emperor should remove such persons from about him as oppressed the subject, and contributed to contaminate him. They required also the being permitted to guard the young prince themselves, and that none of the emperor's favourites or familiars should ever be permitted to converse with him. Heliogabalus was reluctantly obliged to comply; and conscious of the danger he was in, made preparations for death, when it should arrive, in a manner truly whimsical and peculiar. He built a lofty tower with steps of gold and pearl, from whence to throw himself headlong in case of necessity. He also prepared cords of purple silk and gold to strangle himself with; he provided golden swords and daggers to stab himself with; and poisons to be kept in boxes of emerald, in order to obtain what death he chose best. Thus fearing all things but particularly suspicious of the designs of the senate, he banished them all out of the city: he next attempted to poison Alexander, and spread a report of his death; but perceiving the soldiers begin to mutiny, he immediately took him in his chariot to the camp, where he experienced a fresh mortification, by finding all the acclamations of the army directed only to his successor. This not a little raised his indignation, and excited his desire of revenge. He returned towards the city, threatening the most severe punishments against those who had displeased him, and meditating fresh cruelties. However, the soldiers were unwilling to give him time to put his designs in execution: they followed him directly to his palace, pursued him from apartment, to apartment, and at last found him concealed in a privy; a situation very different from that in which he expected to die. Having dragged him from thence through the streets, with the most bitter invectives, and having dispatched him, they attempted once more to squeeze his pampered body into a privy; but not easily effecting this, they threw it into the Tiber, with heavy weights, that none might afterwards find or give it burial. This was the miserable and ignominious death of Heliogabalus, in the 18th year of his age, after a detestable reign of four years. His mother also was slain at the same time by the soldiers; as were also many of the opprobrious associates of his criminal pleasures.

Rome. 387 Adopts Alexander, and takes him for his colleague.

388 Is murdered by the soldiers.

Alexander being, without opposition, declared emperor, the senate, in their usual method of adulation, were for conferring new titles upon him; but he modestly declined them all, alleging, that titles were only honourable when given to virtue, not to station. This outset was an happy omen of his future virtues; and few princes in history have been more commended by his contemporaries, or indeed more deserved commenda-

389 Virtues of Alexander.

Rome.

tion. To the moſt rigid juſtice he added the greateſt humanity. He loved the good, and was a ſevere reprover of the lewd and infamous. His accompliſhments were equal to his virtues. He was an excellent mathematician, geometrician, and muſician; he was equally ſkilled in painting and ſculpture; and in poetry few of his time could equal him. In ſhort, ſuch were his talents, and ſuch the ſolidity of his judgment, that though but 16 years of age, he was conſidered as a wiſe old man.

The firſt part of his reign was ſpent in a reformation of the abuſes of his predeceſſor. He reſtored the ſenators to their rank; nothing being undertaken without the moſt ſage adviſers, and moſt mature deliberation. Among the number of his adviſers was his mother Mammæa; a woman eminent for her virtues and accompliſhments, and who made uſe of her power as well to ſecure her ſon the affections of his ſubjects, as to procure them the moſt juſt adminiſtration. He was a rigid puniſher of ſuch magiſtrates as took bribes, ſaying, That it was not enough to deprive ſuch of their places; for their truſts being great, their lives, in moſt caſes, ought to pay for a breach of them. On the contrary, he thought he could never ſufficiently reward ſuch as had been remarkable for their juſtice and integrity, keeping a regiſter of their names, and ſometimes aſking ſuch of them as appeared modeſt and unwilling to approach him, why they were ſo backward in demanding their reward, and why they ſuffered him to be in their debt? His clemency extended even to the Chriſtians, who had been puniſhed in the former reigns with unrelenting barbarity. Upon a conteſt between them and a company of cooks and vintners, about a piece of public ground, which the one claimed as a place for public worſhip, and the others for exerciſing their reſpective trades, he decided the point by his reſcript, in theſe words: "It is better that God be worſhipped there in any manner, than that the place ſhould be put to uſes of drunkenneſs and debauchery."

390 His abilities in war were not inferior to his aſſiduity in peace. The empire, which from the remiſſneſs and debauchery of the preceding reigns now began to be attacked on every ſide, wanted a perſon of vigour and conduct to defend it. Alexander faced the enemy wherever the invaſion was moſt formidable, and for a ſhort time deterred its ruin. His firſt expedition, in the tenth year of his reign, was againſt the Parthians and Perſians, whom he oppoſed with a powerful army.—The Perſians were routed in a deciſive engagement with great ſlaughter; the cities of Cteſiphon and Babylon were once more taken, and the Roman empire was reſtored to its former limits. Upon his return to Antioch, his mother Mammæa ſent for the famous Origen, to be inſtructed by him in the principles of Chriſtianity; and after diſcourſing with him for ſome time upon the ſubject, diſmiſſed him, with a proper ſafeguard, to his native city of Alexandria. About the ſame time that Alexander was victorious in the Eaſt, Furius Celſus, his general, obtained a ſignal victory over the Mauritanians in Africa. Varius Macrinus was ſucceſsful in Germany, and Junius Palmatus returned with conqueſt from Armenia. However, the number of theſe victories only haſtened the decline of the empire, which was warted by the exertion of its own ſtrength, and was now becoming little more than a ſplendid ruin.

Rome.

About the 13th year of his reign, the Upper Germans, and other northern nations, began to pour down immenſe ſwarms of people upon the more ſouthern parts of the empire. They paſſed the Rhine and the Danube with ſuch fury, that all Italy was thrown into the moſt extreme conſternation. The emperor, ever ready to expoſe himſelf for the ſafety of his people, made what levies he could, and went in perſon to ſtem the torrent; which he ſpeedily effected. It was in the courſe of his ſucceſſes againſt the enemy, that he was cut off by a mutiny among his ſoldiers. The legions encamped about Moguntia, having been abominably corrupted during the reign of Heliogabalus, and trained up in all kinds of rapine and diſobedience, required the moſt ſtrict command. Alexander could neither endure their tumultuary obedience, nor they his regular diſcipline. His own faults, and thoſe of his mother Mammæa, were objected againſt him. They openly exclaimed, That they were governed by an avaricious woman, and a mean-ſpirited boy; and reſolved upon electing an emperor capable of ruling alone. In this general revolt Maximinus, an old and experienced commander, held frequent conferences with the ſoldiers, and enflamed the ſedition. At length, being determined to diſpatch their preſent emperor, they ſent an executioner into his tent; who immediately ſtruck off his head, and, ſhortly after, that of his mother. He died in the 29th year of his age, after a proſperous reign of thirteen years and nine days.

391 Is murdered.

392 The tumults occaſioned by the death of Alexander being appeaſed, Maximinus, who had been the chief promoter of the ſedition, was choſen emperor. This extraordinary man, whoſe character deſerves particular attention, was born of very obſcure parentage, being the ſon of a poor herdſman of Thrace. In the beginning he followed his father's profeſſion, and only exerciſed his perſonal courage againſt the robbers who infeſted the part of the country in which he lived. Soon after his ambition increaſing, he left his poor employment, and enliſted in the Roman army; where he ſoon became remarkable for his great ſtrength, diſcipline, and courage. This gigantic man was no leſs than eight feet and a half high; he had a body and ſtrength correſponding to his ſize, being not leſs remarkable for the magnitude than the ſymmetry of his perſon. His wife's bracelet uſually ſerved him for a thumb-ring; and his ſtrength was ſo great, that he was able to draw a carriage which two oxen could not move. He could ſtrike out an horſe's teeth with a blow of his fiſt, and break its thigh with a kick. His diet was as extraordinary as the reſt of his endowments; he generally eat 40 pounds weight of fleſh every day, and drank ſix gallons of wine, without committing any debauch in either. With a frame ſo athletic, he was poſſeſſed of a mind undaunted in danger, and neither fearing nor regarding any man. The firſt time he was made known to the emperor Severus, was upon his celebrating games on the birth-day of his ſon Geta. Maximinus was then a rude countryman, and requeſted the emperor to be permitted to contend for the prizes which were diſtributed to the beſt runners, wreſtlers, and boxers, of the army. Severus, unwilling to infringe the military diſcipline, would

392 Succeeded by Maximinus, a man of gigantic ſtature and extraordinary ſtrength.

Rome. would not permit him at first to combat, except with slaves, against whom his strength appeared astonishing. He overcame 16 in running, one after the other: he then kept up with the emperor on horseback; and having fatigued him in the course, he was opposed to seven of the most active soldiers, and overcame them with the greatest ease. From that time he was particularly noticed, and taken into the emperor's body-guards, in which his assiduity and prompt obedience were particularly remarkable. In the reign of Caracalla, he was made a centurion, and distinguished himself in this station by his strict attention to the morals and discipline of those he commanded. When made a tribune, he still retained the hard simplicity of his life; ate as the meanest centinel; spent whole days in exercising his troops, and would now and then himself wrestle with eight or ten of the strongest men in the army, whom he threw with scarce any effort. Being thus become one of the most remarkable men in the empire, both for courage, discipline, and personal activity, he gave shortly after, a very high instance of his unshaken fidelity: for when Macrinus was made emperor, he refused to serve under a prince that had betrayed his sovereign; and retired to Thrace, his native country, where he followed commerce, and purchased some lands, content with privacy rather than a guilty dependence. Upon the accession of Heliogabalus to the throne, this bold veteran once more returned to the army; but was, in the very beginning, disgusted at the base effeminacy of the emperor; who, hearing amazing instances of his strength, asked him, if he were equally capable in combats of another nature? This lewd demand was so little suitable to the temper of Maximinus, that he instantly left the court. Upon the death of Heliogabalus, he again returned to Rome, and was received with great kindness by Alexander, who particularly recommended him to the senate, and made him commander of the fourth legion, which consisted of new-raised soldiers. Maximinus gladly accepted of this charge, and performed his duty with great exactness and success, setting an example of virtue and discipline to all the commanders of the army. Nor was his valour less apparent against the Germans, whither he was sent with his legion; so that he was unanimously considered as the boldest, bravest, most valiant, and most virtuous soldier in the whole empire. He soon, however, forfeited all these justly merited titles, when he was raised to the throne; and, from being the most loved commander in the army, he became the most cruel tyrant upon earth. Yet in fact, his former virtues were all of a severe and rigid kind, which, without any education, might very easily degenerate into tyranny; so that he might have mistaken his succeeding cruelty for discipline, and his severity for justice. However this be, Maximinus is considered as one of the greatest monsters of cruelty that ever disgraced power; and, fearful of nothing himself, he seemed to sport with the terrors of all mankind.

393 Becomes a cruel tyrant.

He began his reign, by endeavouring to force obedience from every rank of people, and by vindicating his authority by violence. The senate and people of Rome were the first that incurred his resentment. They utterly refusing to confirm the election of the army, he was the first emperor who reigned without their concurrence or approbation. However he seemed regardless of their opposition, proceeding to secure Rome. his election by putting all such to death as had been raised by his predecessor. The Christians also, having found favour in the former reign, felt the weight of his resentment; and were persecuted in several parts of the empire, particularly in those where he himself resided. His cruelty likewise extended to the rich, whose lives and estates became a frequent sacrifice to avarice and suspicion. But what appears still a more extraordinary instance of his cruelty, being ashamed of the meanness of his extraction, he commanded all such as were best acquainted with him and his parentage to be slain, although there were some among the number that had relieved him in his low condition.

394 His success in war.

However, his cruelties did not retard his military operations, which were carried on with a spirit becoming a better monarch. He overthrew the Germans in several battles, wasted all their country with fire and sword for 400 miles together, and set a resolution of subduing all the northern nations as far as the ocean. In these expeditions, in order to attach the soldiers more firmly to him, he increased their pay; and in every duty of the camp, he himself took as much pains as the meanest centinel in his army, showing incredible courage and assiduity. In every engagement, where the conflict was hottest, Maximinus was always seen fighting there in person, and destroying all before him: for, being bred a barbarian, he considered it as his duty to combat as a common soldier, while he commanded as a general.

395 Conspiracies formed against him.

In the mean time, his cruelties had so alienated the minds of his subjects, that several conspiracies were secretly aimed against him. Magnus, a consular person, and some others, had plotted to break down a wooden bridge, as soon as the emperor had passed it, and thus to abandon him to the enemy. But this being discovered, gave Maximinus an opportunity of indulging his natural severity, upon this pretext alone causing above 4000 to be slain. Shortly after, some of Alexander's old soldiers withdrawing themselves from the camp, proclaimed one Quarcianus as emperor, who had been lately disgusted at Maximinus for being dismissed from employment. The soldiers, in fact, constrained him to accept of the dangerous superiority to which he was exposed: and shortly after, in the spirit of the times, the person who had been the promoter of his advancement, murdered him in his bed, and carried his head to Maximinus; who received him kindly at first, but soon put him to a cruel death, for his complicated guilt of treason and treachery.

396 Gordian proclaimed emperor.

These partial insurrections were soon after followed by a spirit of general discontent throughout all the empire. The provinces of Africa were the first that showed their detestation of the tyrant, whose extortions and cruelties among them were become insupportable. They first slew his procurator; and afterwards considering how dangerous a crime they had committed, they resolved to throw off all expectations of pardon, and create a new emperor. Gordian was then proconsul of Africa, a person of great fame for his virtues, and highly reverenced for a blameless life of near 80. Him, therefore, they determined to elect; and accordingly the soldiers and natives assembling together, tumultuously entered his house, resolved to put their design in execution. Gordian, who at first supposed

Rome. they were come to kill him, being made ſenſible of their intentions, utterly refuſed their offer, alleging his extreme age, and Maximinus's power. But all his oppoſition was vain: they conſtrained him to accept of the proffered dignity; and he, with his ſon Gordian, who was 46 years of age, were declared emperors. Being thus raiſed contrary to his inclination, the old man immediately wrote to the ſenate, declaring that he had unwillingly accepted of the empire, and would only keep his authority till he had freed it from the tyranny of its preſent oppreſſor. The ſenate very joyfully confirmed his election, adjudging Maximinus as an enemy and traitor to the ſtate. The citizens alſo ſhewed an equal zeal in the cauſe: they flew upon ſuch as were the reputed friends of Maximinus, and tore them in pieces; even ſome who were innocent falling a ſacrifice to the multitude's blind rage. So great an alteration being made in the city againſt the intereſts of Maximinus, the ſenate were reſolved to drive the oppoſition to the extreme; and accordingly made all neceſſary preparations for their ſecurity, ordering Maximinus's governors to be diſplaced, and commanding all the provinces to acknowledge Gordian for emperor. This order was differently received in different parts, as people were affected to one or the other party; in ſome provinces the governors were ſlain; in others, the meſſengers of the ſenate; ſo that all parts of the empire felt the conſequence of the civil war.

397 Rage of Maximinus on hearing the news

In the mean time, when Maximinus was informed of theſe charges againſt him, his rage appeared ungovernable. He roared like a ſavage beaſt, and violently ſtruck his head againſt the wall, ſhowing every inſtance of ungovernable diſtraction. At length his fury being ſomewhat ſubſided, he called his whole army together; and, in a ſet ſpeech, exhorted them to revenge his cauſe, giving them the ſtrongeſt aſſurances that they ſhould poſſeſs the eſtates of all ſuch as had offended. The ſoldiers unanimouſly promiſed to be faithful; they received his harangue with their uſual acclamations; and, thus encouraged, he led them towards Rome, breathing nothing but ſlaughter and revenge. However, he found many obſtacles to his impetuoſity; and, though he deſired nothing ſo much as diſpatch, his marches were incommodious and ſlow. The tumultuous and diſobedient armies of the empire were at preſent very different from the legions that were led on by Sylla or Cæſar; they were loaded with baggage, and followed by ſlaves and women, rather reſembling an eaſtern caravan, than a military battalion. To theſe inconveniences alſo was added the hatred of the cities through which he paſſed, the inhabitants all abandoning their houſes upon his approach, and ſecuring their proviſions in proper hiding-places. However, in the complication of inconveniences and misfortune, his affairs began to wear a favourable appearance in Africa: for Capelianus, the governor of Numidia, raiſed a body of troops in his favour, and marched againſt Gordian, towards Carthage; where he fought the younger Gordian, ſlew him, and deſtroyed his army. The father, hearing of the death of his ſon, together with the loſs of the battle, ſtrangled himſelf in his own girdle. Capelianus purſuing his victory, entered Carthage; where he gave a looſe to pillage and ſlaughter, under a pretence of revenging the cauſe of Maximinus. The news of theſe ſucceſſes was ſoon brought to the emperor, who now increaſed his diligence, and flattered himſelf with a ſpeedy opportunity of revenge. He led on his large army by haſty journeys into Italy, threatening deſtruction to all his oppoſers, and ardently wiſhing for freſh opportunities of ſlaughter.

398 Gordian ſucceeded and killed.

Rome.

Nothing could exceed the conſternation of the ſenate upon the news of this defeat. They now ſaw themſelves not only deprived of the aſſiſtance of Gordian and his ſon, on whom they greatly relied; but alſo oppoſed by two formidable tyrants, each commanding a victorious army, directly marching towards Rome, and meditating nothing but vengeance. In this afflicting exigence, they, with great ſolemnity, met at the temple of Jupiter, and after the moſt mature deliberations, choſe Pupienus and Balbinus emperors conjointly. Theſe were men who had acquired the eſteem of the public both in war and peace, having commanded armies, and governed provinces, with great reputation; and being now appointed to oppoſe Maximinus, they made what levies they could, both in Rome and the country. With theſe, Pupienus marched to ſtop the progreſs of the invaders, leaving the city to a freſh and unlooked for calamity. This was occaſioned by two of Maximinus's ſoldiers, who, entering the ſenate-houſe, were ſlain by two ſenators. This quickly gave offence to the body of the prætorian ſoldiers, who inſtantly reſolved to take revenge, but were oppoſed by the citizens; ſo that nothing was ſeen throughout Rome, but tumult, ſlaughter, and cruelty. In this univerſal confuſion, the calamity was increaſed by the ſoldiers ſetting the city on fire, while the wretched inhabitants were combating each other in the midſt of the flames.

399 Pupienus and Balbinus proclaimed emperors.

Nevertheleſs, Maximinus himſelf, in whoſe favour theſe ſeditions were promoted, did not ſeem to be more fortunate. Upon being informed of the new election of emperors, his fury was again renewed, and he paſſed the Alps, expecting, upon entering Italy, to refreſh his fatigued and famiſhed army in that fertile part of the country. But in this he was entirely diſappointed; the ſenate had taken ſuch care to remove all kinds of ſuſtenance to fortified places, that he ſtill found himſelf reduced to his former neceſſities, while his army began to murmur for want. To this another diſappointment was added ſhortly after: for, approaching the city of Aquileia, which he expected to enter without any difficulty, he was aſtoniſhed to find it prepared for the moſt obſtinate reſiſtance, and reſolved to hold out a regular ſiege. This city was well fortified and populous, and the inhabitants greatly averſe to Maximinus's government but what added ſtill more to its ſtrength, it was commanded by two excellent generals, Crifpinus and Menophilus, who had ſo well furniſhed it with men and ammunition, that Maximinus found no ſmall reſiſtance, even in inveſting the place. His firſt attempt was, to take the city by ſtorm; but the beſieged threw down ſuch quantities of ſcalding pitch and ſulphur upon his ſoldiers, that they were unable to continue the aſſault. He then determined upon a blockade; but the inhabitants were ſo reſolute, that even the old men and children were ſeen combating upon the walls, while the women cut off their hair to furniſh the foldiers with bow-ſtrings. Maximinus's rage at this unexpected oppoſition was

400 Aquileia beſieged by Maximinus.

now

Rome. now ungovernable: having no enemy to wreak his reſentment upon, he turned it againſt his own commanders. He put many of his generals to death, as if the city had held out through their neglect or incapacity, while famine made great depredations upon the reſt of his army. Nothing now appeared on either ſide to terminate the conteſt, except the total deſtruction of either. But a mutiny in Maximinus's own army a while reſcued the declining empire from deſtruction, and ſaved the lives of thouſands. The ſoldiers being long haraſſed by famine and fatigue, and hearing of revolts on every ſide, reſolved to terminate their calamities by the tyrant's death. His great ſtrength, and his being always armed, were, at firſt, the principal motives to deter any from aſſaſſinating him; but at length having made his guards accomplices in their deſign, they ſet upon him, while he ſlept at noon in his tent, and ſlew both him and his ſon, whom he had made his partner in the empire, without any oppoſition, after an uſurpation of about three years, and in the 65th year of his age.

401 Is aſſaſſinated.

The tyrant being dead, and his body thrown to the dogs and birds of prey, Pupienus and Balbinus continued for ſome time emperors without oppoſition. But the prætorian ſoldiers, who had long been notorious for mutiny and treaſon, ſoon reſolved on further change. Nor did the diſſenſions between the new made emperors themſelves a little contribute to their downfall: for though both were remarkable for wiſdom and age, yet they could not reſtrain the mutual jealouſy of each other's power. Pupienus claimed the ſuperiority from his great experience; while Balbinus was equally aſpiring upon account of his family and fortune.

In this ill-judged conteſt, the prætorian ſoldiers, who were enemies to both, ſet upon them in their palace, at a time their guards were amuſed with ſeeing the Capitoline games. Pupienus perceiving their tumultuous approach, ſent with the utmoſt ſpeed for aſſiſtance from his colleague: but he, out of a culpable ſuſpicion that ſomething was deſigned only againſt himſelf, refuſed to ſend ſuch of the German guards as were next his perſon. Thus the ſeditious ſoldiers found an eaſy acceſs to both the emperors' apartments; and dragging them from the palace towards the camp, ſlew them both, leaving their dead bodies in the ſtreets, as a dreadful inſtance of their ſedition.

402 And like wiſe Pupienus and Balbinus.

In the midſt of this ſedition, as the mutineers were proceeding along, they by accident met Gordian, the grandſon of him who was ſlain in Africa, and declared him emperor on the ſpot. The ſenate and people had been long reduced to the neceſſity of ſuffering their emperors to be nominated by the army; ſo that all they could do in the preſent inſtance was to confirm their choice. This prince was but 16 years old when he began his reign, but his virtues ſeemed to compenſate for his want of experience. His principal aims were, to unite the oppoſing members of the government, and to reconcile the ſolders and citizens to each other. His learning is ſaid to have been equal to his virtues; and we are aſſured that he had 62,000 books in his library. His reſpect for Miſithæus, his governor and inſtructor, was ſuch, that he married his daughter, and profited by his counſels in all the critical circumſtances of his reign.

403 Young Gordian proclaimed emperor.

The firſt four years of this emperor's reign were attended with the utmoſt proſperity; but in the fifth he was alarmed with accounts from the eaſt, that Sapor, king of Perſia, had furiouſly invaded the confines of the Roman empire, and having taken Antioch, had pillaged Syria and all the adjacent provinces. Beſides the Perſians, the Goths alſo invaded the empire on their ſide, pouring down like an inundation from the north, and attempting to fix their reſidence in the kingdom of Thrace. To oppoſe both theſe invaſions, Gordian prepared an army; and having gained ſome victories over the Goths, whom he obliged to retire, he turned his arms againſt the Perſians, whom he defeated upon ſeveral occaſions, and forced to return home with diſgrace. In gaining theſe advantages, Miſithæus, whom he had made prætorian præfect, had the principal ſhare; but he dying ſoon after (as it is ſuppoſed being poiſoned by Philip an Arabian, who was appointed his ſucceſſor), the fortunes of Gordian ſeemed to die with him. The army began to be no longer ſupplied with proviſions as uſual; murmurs were heard to prevail, and theſe were artfully fomented by Philip. Things thus proceeding from bad to worſe, Philip was at firſt made his equal in the command of the empire; ſhortly after, inveſted with the ſole power; and, at length, finding himſelf capable of perpetrating his long meditated cruelty, Gordian was, by his order, ſlain, in the 22d year of his age, after a ſucceſsful reign of near ſix years.

Rome. 404 His ſucceſs againſt the barbarians.

405 Is murdered by Philip, who ſucceeds him.

Philip having thus murdered his benefactor, was ſo fortunate as to be immediately acknowledged emperor by the army. The ſenate alſo, though they ſeemed at firſt to oppoſe his power, confirmed his election, and gave him, as uſual, the title of *Auguſtus*. Philip was about 40 years old when he came to the throne; being the ſon of an obſcure Arabian, who had been captain of a band of robbers. Upon his exaltation, he aſſociated his ſon, a boy of ſix years of age, as his partner in the empire; and, in order to ſecure his power at home, made peace with the Perſians, and marched his army towards Rome. On his way, having conceived a deſire to viſit his native country of Arabia, he built there a city called *Philippopolos*; and from thence returning to Rome, he was received as emperor, and treated with all the marks of ſubmiſſion, though not of joy. To put the people in good humour, he cauſed the ſecular games to be celebrated, with a magnificence ſuperior to any of his predeceſſors, it being juſt 1000 years after the building of the city. Upon occaſion of theſe games, we are told that both Philip and his ſon were converted to Chriſtianity. However this be, a murderer and an ungrateful uſurper does no great honour to whatever opinion he may happen to embrace. We have little account of the latter part of his reign in the wretched and mutilated hiſtories of the times; we only learn, that the Goths having invaded the empire, Marinus, Philip's lieutenant, who was ſent againſt them, revolted, and cauſed himſelf to be declared emperor. This revolt, however, was but of ſhort duration; for the army which had raiſed him repented of their raſhneſs, depoſed him with equal levity, and put him to death. Decius was the perſon whom Philip appointed to command in the room of the revolting general. The chief merit of Decius with the emperor

436 The theuſandth year of Rome.

W...

[illegible] Mœsia had rebelled, he averred in [illegible] that the [illegible] presumption would be [illegible] when it happened ac- [illegible] Philip appointed him to succeed in the [illegible] army. Decius, who was a [illegible] being thus entrusted with so [illegible] upon arriving at the army found that the soldiers were resolved on investing him with the supreme authority. He therefore seemed to suffer [illegible] importunities, as if through constraint; and, in the mean time, sent Philip word, that he had unwillingly assumed the title of emperor, the better to secure it for the rightful possessor; adding, that he only [illegible] for a convenient opportunity of giving up his pretensions and title together. Philip knew mankind too well, to rely upon such professions; he therefore got together what forces he could from the several provinces, and led them forward towards the confines of Italy. However, the army had scarce arrived at Verona, when it revolted in favour of Decius, and setting violently upon Philip, a centinel, with one blow, cut off his head, or rather cleaved it asunder, separating the under jaw from the upper. Such was the deserved death of Philip, in the 45th year of his age, after a reign of about five years; Decius being universally acknowledged as his successor, A. D. 248.

[illegible] by Decius.

The activity and wisdom of Decius in some measure stopped the hastening decline of the Roman empire. The senate seemed to think so highly of his merits, that they voted him not inferior to Trajan; and indeed he seemed in every instance to consult their dignity in particular, and the welfare of all inferior ranks of people. He permitted them to choose a censor, as was the custom in the flourishing times of Rome; and Valerian, his general, a man of such strict morals, that his life was said to be a continual censorship, was chosen to that dignity.—But no virtues could now prevent the approaching downfall of the state; the obstinate disputes between the Pagans and the Christians within the empire, and the unceasing irruptions of barbarous nations from without, enfeebled it beyond the power of a remedy. To stop these, a persecution of the Christians, who were now grown the most numerous body of the people, was impolitically, not to say unjustly, begun; in which thousands were put to death, and all the arts of cruelty tried in vain to lessen their growing number. This persecution was succeeded by dreadful devastations from the Goths, particularly in Thrace and Mœsia, where they had been most successful. These irruptions Decius went to oppose in person; and coming to an engagement with them, slew 30,000 of the barbarians in one battle. However, being resolved to pursue his victory, he was, by the treachery of Gallus his own general, led into a defile, where the king of the Goths had secret information to attack him. In this disadvantageous situation, Decius first saw his son killed with an arrow, and soon after his whole army put to the rout. Wherefore, resolving not to survive his loss, he put spurs to his horse, and instantly plunging into a quagmire, was swallowed up, and his body could never be found after. He died in the 50th year of his age, after a short reign of two years and six months; leaving the character of an excellent prince, and one capable of averting the destruction of the empire, if human means could have effected it.

[illegible] and [illegible] by the Goths.

Rome.

409 Succeeded by Gallus.

Gallus, who had thus betrayed the Roman army, had address enough to get himself declared emperor by that part of it which survived the defeat; he was 45 years old when he began to reign, and was descended from an honourable family in Rome. He bought a dishonourable peace from the enemies of the state, agreeing to pay a considerable annual tribute to the Goths, whom it was his duty to repress. Having thus purchased a short remission from war, by the disgrace of his country, he returned to Rome, to give a loose to his pleasures, regardless of the wretched situation of the empire.

410 Miserable state of the empire.

Nothing can be more deplorable than the state of the Roman provinces at this time. The Goths and other barbarous nations, not satisfied with their late bribes to continue in peace, broke in upon the eastern parts of Europe. On the other side, the Persians and Scythians committed unheard of ravages in Mesopotamia and Syria. The emperor, regardless of every national calamity, was lost in debauch and sensuality at home; and the Pagans were allowed a power of persecuting the Christians through all parts of the state; these calamities were succeeded by a pestilence, that seemed to have in general spread over every part of the earth, and which continued raging for several years in an unheard of manner; and all these by a civil war, which followed shortly after, between Gallus and his general Æmilianus, who having gained a victory over the Goths, was proclaimed emperor by his conquering army. Gallus hearing this, was soon roused from the intoxications of pleasure, and prepared to oppose his dangerous rival. Both armies met in Mœsia, and a battle ensued, in which Æmilianus was victorious, and Gallus, with his son, were slain. His death was merited, and his vices were such as to deserve the detestation of posterity. He died in the 47th year of his age, after an unhappy reign of two years and four months, in which the empire suffered inexpressible calamities. Æmilianus, after his victory over Gallus, expected to be acknowledged emperor; but he soon found himself miserably disappointed. The senate refused to acknowledge his claims; and an army that was stationed near the Alps chose Valerian, their own commander, to succeed to the throne. In consequence of this, Æmilianus's soldiers began to consider their general as an obstacle to the universal tranquillity, and slew him in order to avoid the mischiefs of a civil war.

Valerian being thus universally acknowledged as emperor, although arrived at the age of 70, set about reforming the state with a spirit that seemed to mark a good mind and unabated vigour. But reformation was then grown almost impracticable. The disputes between the Pagans and Christians divided the empire as before; and a dreadful persecution of the latter ensued. The northern nations over-ran the Roman dominions in a more formidable manner than ever; and the empire began to be usurped by a multitude of petty leaders, each of whom, neglecting the general state, set up for himself. To add to these calamities, the Persians, under their king Sapor, invaded Syria; and coming into Mesopotamia, took the unfortunate Valerian Prisoner,

491 Valerian taken prisoner, and cruelly insulted by the Persians.

Rome. ſoner, as he was making preparations to oppoſe them. Nothing can exceed the indignities, as well as the cruelties, which were practiſed upon this unhappy monarch, thus fallen into the hands of his enemies. Sapor, we are told, always uſed him as a footſtool for mounting his horſe; he added the bitterneſs of ridicule to his inſults, and uſually obſerved, That an attitude like that to which Valerian was reduced, was the beſt ſtatue that could be erected in honour of his victory. This horrid life of inſult and ſufference continued for ſeven years, and was at length terminated by the cruel Perſian's commanding his priſoner's eyes to be plucked out, and afterwards cauſing him to be flead alive.

492 The empire invaded on all ſides by the barbarians.

The news of the defeat of the Roman army by the Perſians, and the captivity of Valerian, no ſooner reached the barbarous nations at war with Rome, than they poured on all ſides into the Roman territories in incredible multitudes, threatening the empire, and Rome itſelf, with utter deſtruction. The Goths and Scythians ravaged Pontus and Aſia, committing every where dreadful devaſtations; the Alemanni and Franks having over-run Rhætia advanced as far as Ravenna; putting all to fire and ſword; the Quadi and Sarmatians ſeized on great part of Dacia and Pannonia; while other barbarous nations, invading Spain, made themſelves maſters of Tarraco and other important places in that province. In the mean time Gallienus, the ſon of Valerian, having promiſed to revenge his father's captivity, and repreſs the barbarians, was choſen emperor without any oppoſition. He was at that time in Gaul; but haſtened into Italy, from whence he drove out the barbarians, either by the terror of his approach, or by overcoming them in battle.—In Dacia and Pannonia, alſo, the barbarians were driven back by Regillianus, who commanded there, and who is ſaid to have gained ſeveral victories in one day.

But in the mean time, one Ingenuus, a man of great reputation in war, and univerſally beloved both by the people and ſoldiery, cauſed himſelf to be proclaimed emperor in Pannonia, where he was generally acknowledged as well as in Mœſia. Gallienus no ſooner heard of his revolt, than he marched from the neighbourhood of Ravenna, where he then was, into Illyricum, engaged Ingenuus, and put him to flight. Some authors tell us, that Ingenuus was killed after the battle by his own ſoldiers; while others affirm, that he put an end to his own life to avoid falling into the hands of Gallienus, who uſed his victory with a cruelty hardly to be paralleled. The following letter to Verianus Celer, one of his officers, will ſhow the diſpoſition of this emperor: "I ſhall not be ſatisfied (ſays he) with your putting to death only ſuch as have borne arms againſt me, and might have fallen in the field: you muſt in every city deſtroy all the males, old and young; ſpare none who have wiſhed ill to me; none who have ſpoken ill of me the ſon of Valerian, the father and brother of princes. Ingenuus emperor! Tear, kill, cut in pieces without mercy: you underſtand me; do then as you know I would do, who have written to you with my own hand." In conſequence of theſe cruel orders, a moſt dreadful havock was made among that unhappy people; and, in ſeveral cities, not one male child was left alive. The troops who had formerly ſerved under Ingenuus, and the inhabitants of Mœſia who had eſcaped the general

493 Monſtrous cruelty of the new emperor Gallienus.

ſlaughter, provoked by theſe cruelties, proclaimed Regillianus emperor. He was a Dacian by birth, deſcended, as was ſaid, from the celebrated king Decebalus whom Trajan had conquered; and had, by ſeveral gallant actions, gained reputation in the Roman armies. After he was proclaimed emperor, he gained great advantages over the Sarmatians; but was ſoon after murdered by his own ſoldiers. Theſe revolts were quickly followed by many others. Indeed it is not ſurpriſing, at a time when the reins of government were held with ſo looſe an hand, that a crowd of uſurpers ſhould ſtart up in every province of the empire. The great number of uſurpers who pretended to the empire about this time have been diſtinguiſhed by the name of the *thirty tyrants*. However, there were only 19; viz. Cyriades, Macrianus, Baliſta, Udenatus, and Zenobia in the eaſt: in Gaul, and the weſtern provinces, Poſthumus, Lollianus, Victorinus and his mother Victoria, Marius, and Tetricus; in Illyricum, and on the confines of the Danube, Ingenuus, Regillianus, and Aureolus; in Pontus, Saturninus; in Iſauria, Trebellianus; in Theſſaly, Piſo; in Achaia, Valens; in Egypt, Æmilianus; and in Africa, Celſus. Several of theſe pretenders to the empire, however, though branded with the opprobrious appellation of tyrants, were eminent examples of virtue, and almoſt all of them were poſſeſſed of a conſiderable ſhare of vigour and ability. The principal reaſon aſſigned for their revolt was, the infamous character of Gallienus, whom neither officers nor ſoldiers could bear to ſerve. Many of them, however, were forced by the ſoldiers to aſſume the imperial dignity much againſt their will. "You have loſt," ſaid Saturninus to his ſoldiers when they inveſted him with the purple, "a very uſeful commander, and have made a very wretched emperor." The apprehenſions of Saturninus were juſtified by the event. Of the 19 uſurpers already mentioned, not one died a natural death; and in Italy and Rome Gallienus alone continued to be acknowledged emperor. That prince indeed honoured Odenatus prince of Palmyra with the title of *Auguſtus*, who continued to poſſeſs an independent ſovereignty in the eaſt all his lifetime, and at his death tranſmitted it to his wife Zenobia. See PALMYRA.

494 The thirty tyrants.

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495 Fatal conſequences of theſe uſurpations.

The conſequences of theſe numerous uſurpations were the moſt fatal that can be conceived. The elections of theſe precarious emperors, their life and death, were equally deſtructive to their ſubjects and adherents. The price of their elevation was uſually paid to the troops by an immenſe donative drawn from the exhauſted people. However virtuous their character, and however pure their intentions might be, they found themſelves reduced to the neceſſity of ſupporting their uſurpation by frequent acts of rapine and cruelty. When they fell, they involved armies and provinces in their fall, as appears from the letter of Gallienus already quoted. Whilſt the forces of the ſtate were diſperſed in private quarrels, the defenceleſs provinces lay expoſed to every invader. The braveſt uſurpers were compelled, by the perplexity of their ſituation, to conclude diſhonourable treaties with the barbarians, and even to ſubmit to ſhameful tributes, and introduce ſuch numbers of barbarians into the Roman ſervice as ſeemed ſufficient at once to overthrow the empire.

But

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[illegible] empire ſeemed thus ready to ſink at [illegible] upon the death of Gallienus, [illegible] by Martian, one of his own gene[illegible] and Aureolus, one of the tyrants, [illegible] Milan. His death gave general ſatisfaction to all, [illegible] which ped to reap the reward of [illegible] the plunder of Milan. But being [illegible] in their expectations, and in ſome meaſure kept within bounds by the largeſſes of Martian, Flavius Claudius was nominated to ſucceed, and joyfully accepted by all orders of the ſtate, and his title confirmed by the ſenate and the people.

We are not ſufficiently aſſured of this emperor's lineage and country. Some affirm that he was born in Dalmatia, and deſcended from an ancient family there; others aſſert that he was a Trojan; and others, that he was ſon to the emperor Gordian. But, whatever might have been his deſcent, his merits were by no means doubtful. He was a man of great valour and conduct, having performed the moſt eminent ſervices againſt the Goths, who had long continued to make irruptions into the empire. He was now about 55 years old, equally remarkable for the ſtrength of his body and the vigour of his mind; he was chaſte and temperate, a rewarder of the good, and a ſevere puniſher of ſuch as tranſgreſſed the laws. Thus endowed, therefore, he in ſome meaſure put a ſtop to the precipitate decline of the empire, and once more ſeemed to reſtore the glory of Rome.

497 Who defeats the Goths, and relieves the affairs of the empire.

His firſt ſucceſs, upon being made emperor, was againſt Aureolus, whom he defeated near Milan. His next expedition was to oppoſe the Goths, againſt whom he led a very numerous army. Theſe barbarians had made their principal and moſt ſucceſsful irruptions into Thrace and Macedonia, ſwarmed over all Greece, and had pillaged the famous city of Athens, which had long been the ſchool of all the polite arts to the Romans. The Goths, however, had no veneration for thoſe embelliſhment that tend to ſoften and humanize the mind, but deſtroyed all monuments of taſte and learning with the moſt ſavage alacrity. It was upon one of theſe occaſions, that, having heaped together a large pile of books in order to burn them, one of the commanders diſſuaded them from the deſign, alleging, that the time which the Grecians ſhould waſte on books would only render them more unqualified for war. But the empire ſeemed to tremble, not only on that ſide, but almoſt on every quarter. At the ſame time, above 300,000 of theſe barbarians (the Heruli, the Trutangi, the Virturgi, and many nameleſs and uncivilized nations) came down the river Danube, with 2000 ſhips, fraught with men and ammunition, ſpreading terror and deva[illegible]ation on every ſide.

In this ſtate of univerſal diſmay, Claudius alone ſeemed to continue unſhaken. He marched his diſproportioned army againſt the ſavage invaders; and, though but ill prepared for ſuch an engagement, as the forces of the empire were then employed in different parts of the world, he came off victorious, and made an incredible ſlaughter of the enemy. The whole of their great army was either cut to pieces or taken priſoners: houſes were filled with their arms; and ſcarce a province of the empire, that was not furniſhed with ſlaves from thoſe that ſurvived the defeat. Theſe ſucceſſes were followed by many others in different parts of the empire; ſo that the Goths, for a conſiderable time after, made but a feeble oppoſition. He ſome time after marched againſt the revolted Germans, and overthrew them with conſiderable ſlaughter. His laſt expedition was to oppoſe Tetricus and Zenobia, his two puiſſant rivals in the empire. But on his march, as he approached near Sirmium, in Pannonia, he was ſeized with a peſtilential fever, of which he died in a few days, to the great regret of his ſubjects, and the irreparable loſs of the Roman empire. His reign, which was not quite of two years continuance, was active and ſucceſsful; and ſuch is the character given of him by hiſtorians, that he is ſaid to have united in himſelf the moderation of Auguſtus, the valour of Trajan, and the piety of Antoninus.

498 Claudius dies, and is ſucceeded by Aurelian.

Immediately after the death of Claudius, the army made unanimous choice of Aurelian, who was at that time maſter of the horſe, and eſteemed the moſt valiant commander of his time. However, his promotion was not without oppoſition on the part of the ſenate, as Quintillus, the brother of the deceaſed emperor, put in his claim, and was for a while acknowledged at Rome. But his authority was of very ſhort duration; for finding himſelf abandoned by thoſe who at firſt inſtigated him to declare for the throne, he choſe to prevent the ſeverity of his rival by a voluntary death, and cauſing his veins to be opened, expired, after having reigned but 17 days.

Aurelian being thus univerſally acknowledged by all the ſtates of the empire, aſſumed the command, with a greater ſhow of power than his predeceſſors had enjoyed for ſome time before. This active monarch was born of mean and obſcure parentage in Dacia, and was about 55 years old at the time of his coming to the throne. He had ſpent the early part of his life in the army, and had riſen through all the gradations of military duty. He was of unſhaken courage and amazing ſtrength; he in one engagement killed 40 of the enemy with his own hand, and above 900 at ſeveral different times. In ſhort, his valour and expedition were ſuch, that he was compared to Julius Cæſar; and, in fact, only wanted mildneſs and clemency to be every way his equal.

499 His great ſucceſs againſt the barbarians.

The whole of this monarch's reign was ſpent in repreſſing the irruptions of the northern nations, in humbling every other pretender to the empire, and puniſhing the monſtrous irregularities of his own ſubjects. He defeated the Marcomanni, that had invaded Italy, in three ſeveral engagements, and at length totally deſtroyed their army. He was not leſs ſucceſsful againſt Zenobia, the queen of the Eaſt, a woman of the moſt heroic qualifications, who had long diſclaimed the Roman power, and eſtabliſhed an empire of her own, as is related under the article PALMYRA.

Aurelian having thus brought back peace to the empire, endeavoured, by the rigours of juſtice, to bring back virtue alſo. He was very ſtrict in puniſhing the crimes of the ſoldiery: in his orders to his lieutenants, he inſiſted that the peaſants ſhould not be plundered upon any pretences; that not even a grape, a grain of ſalt, or a drop of oil, ſhould be exacted unjuſtly. He cauſed a ſoldier who had committed adultery with his hoſteſs, to have his feet tied to the tops of two trees, forcibly bent at top to meet each other; which being let looſe, and ſuddenly recoiling, tore the criminal

Rome. criminal in two. This was a ſeverity that might take the name of cruelty; but the vices of the age, in ſome meaſure, required it. In theſe puniſhments inflicted on the guilty, the Chriſtians, who had all along been growing more numerous, were ſharers. Againſt theſe he drew up ſeveral letters and edicts, which ſhowed that he intended a very ſevere perſecution; but if we may believe the credulous hiſtorians of the times, he was diverted juſt as he was going to ſign them by a thunderbolt, which fell ſo near his perſon, that all the people judged him to be deſtroyed.

But however Heaven might have interpoſed on this occaſion, it is certain that his ſeverities at laſt were the cauſe of his deſtruction. Meneſthus, his principal ſecretary, having been threatened by him for ſome fault which he had committed, began to conſider how he might prevent the meditated blow. For this purpoſe, he forged a roll of the names of ſeveral perſons, whom he pretended the emperor had marked out for death, adding his own to ſtrengthen him in the confidence of the party. The ſcroll thus contrived was ſhown with an air of the utmoſt ſecrecy to ſome of the perſons concerned; and they, to procure their ſafety, immediately agreed with him to deſtroy the emperor. This reſolution was ſoon put in execution; for, as the emperor paſſed with a ſmall guard from Uraclea, in Thrace, towards Byzantium, the conſpirators ſet upon him at once, and ſlew him with very ſmall reſiſtance. He was ſlain in the 60th, or, as ſome ſay, in the 63d year of his age, after a very active reign of almoſt five years.

500 He is murdered.

The number of pretenders to the throne, which had formerly infeſted the empire, were, by the laſt monarch's activity, ſo entirely removed, that there now ſeemed to be none that would venture to declare himſelf a candidate. The army referred the choice to the ſenate; and, on the other ſide, the ſenate declined it; ſo that a ſpace of near eight months elapſed in theſe negociations. At length, however, the ſenate made choice of Tacitus, a man of great merit, and noway ambitious of the honours that were offered him. Upon being ſolicited to accept the empire, he at firſt refuſed, and retired to his country-houſe in Campania, to avoid their importunities; but being at length prevailed upon, he accepted the reins of government, being at that time 75 years old.

501 Tacitus choſen emperor.

One of the firſt acts of his government was the puniſhment of thoſe who had conſpired againſt the late emperor. Meneſthus was impaled alive, his body being thrown to be devoured by wild beaſts; his eſtate alſo was confiſcated to the exchequer; and his ready money, which was very conſiderable, applied towards paying the army. During this ſhort reign, the ſenate ſeemed to have a large ſhare of authority, and the hiſtorians of the times are liberal of their praiſes to ſuch emperors as were thus willing to divide their power.—Upon endeavouring to obtain the conſulſhip for his brother Probus, he was refuſed it by the ſenate; at which he ſeemed no way moved, but calmly remarked that the ſenate beſt knew whom to chooſe. This moderation prevailed in all the reſt of his conduct: he was extremely temperate; his table was plain, and furniſhed with nothing expenſive; he even prohibited his empreſs from wearing jewels, and forbad the uſe of gold and embroidery. He was fond of learning, and the memory of ſuch men as had deſerved well of their country. He particularly eſteemed the works of his nameſake Tacitus the hiſtorian; commanding that they ſhould be placed in every public library throughout the empire, and that many copies of them ſhould be tranſcribed at the public charge. A reign begun with ſuch moderation and juſtice, only wanted continuance to have made the empire happy; but after enjoying the empire about ſix months, he died of a fever in his march to oppoſe the Perſians and Scythians, who had invaded the eaſtern parts of the empire.

Rome. 502 His death.

Upon the death of Tacitus the army ſeemed divided in the choice of an emperor; one part of it choſe Florianus, brother to the deceaſed; but the majority were for ſome time undetermined. They alleged amongſt each other the neceſſity of chooſing one eminent for valour, honour, piety, clemency, and probity; but the laſt virtue being that chiefly inſiſted upon, the whole army, as if by common conſent, cried out that Probus ſhould be emperor. He was accordingly confirmed in this dignity with the uſual ſolemnities: and Florianus finding himſelf deſerted, even by thoſe legions who had promiſed to ſtand up in his ſupport, opened his arteries and bled himſelf to death,

503 Probus raiſed to the empire.

Probus was 44 years old when he aſcended the throne, being born of noble parentage at Sirmium in Pannonia, and bred up a ſoldier from his youth. He began early to diſtinguiſh himſelf for his diſcipline and valour; being frequently the firſt man who in beſieging towns ſcaled the walls, or that burſt into the enemy's camp. He was no leſs remarkable for ſingle combats, and ſaving the lives of many eminent citizens. Nor was his activity and courage, when elected to the empire, leſs apparent, than in his private ſtation. He firſt repreſſed the Germans in Gaul, of whom he ſlew 400,000. He then marched into Dalmatia, to oppoſe and ſubdue the Sarmatians. From thence he led his forces into Thrace, and forced the Goths to ſue for peace. He after that turned his arms towards Aſia; ſubdued the province of Iſauria; and marching onward, conquered a people called the *Blemyes*; who, leaving their native forefts of Ethiopia, had poſſeſſed themſelves of Arabia and Judea, and had continued in a ſtate of rebellion ſince the reign of Gallienus. Narſis alſo, the king of Perſia, ſubmitted at his approach: and upon his return into Europe, he divided the depopulated parts of Thrace among its barbarous invaders: a circumſtance that afterwards produced great calamities to the empire.

504 His conqueſts.

His diligence was not leſs conſpicuous in ſuppreſſing inteſtine commotions. Saturninus being compelled by the Egyptians to declare himſelf emperor, was defeated and ſlain. Proculus alſo (a perſon remarkable only for his great attachment to women, and who boaſted in a letter, that, having taken 100 Sarmatian virgins priſoners, he deprived ten of that name in one night, and all the reſt within a fortnight) ſet up againſt the emperor; but was compelled to fly, and at length delivered up by the Germans. At the ſame time Conoſus (who was a remarkable votary to Bacchus, being able to drink as much wine as ten could do, without being diſordered) rebelled, and being overcome hanged himſelf in deſpair. Probus, when he ſaw him immediately after his death, could not avoid pointing to him, and ſaying, "There hangs not a man but a cask." Still, however, notwithſtanding every effort to give quiet to the empire,

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[illegible] surrounded it kept it in continual [illegible]. They were frequently repulsed into their native wilds, but they as certainly returned with fresh rage and increased ferocity. The Goths and Vandals, finding the emperor engaged in quelling domestic disputes, renewed their accustomed inroads, and once more felt the punishment of their presumptions. They were conquered in several engagements; and Probus returned in triumph to Rome. His active temper, however, would not suffer him to continue at rest whilst a single enemy was left to conquer. In his last expedition he led his soldiers against the Persians; and going through Sirmium, the place of his nativity, he there employed several thousands of his soldiers in draining a fen that was incommodious to the inhabitants. The fatigues of this undertaking, and the great restraint that was laid upon the soldiers' licentious manners, produced a conspiracy, which ended in his ruin: for taking the opportunity as he was marching into Greece, they set upon and slew him after he had reigned six years and four months with general approbation.

506 Is murdered.

507 Reigns of Carus, Carinus, and Numerianus.

Carus, who was prætorian prefect to the deceased emperor, was chosen by the army to succeed him; and he, to strengthen his authority, named his two sons Carinus and Numerianus with him in command; the former of whom was as much sullied by his vices, as the youngest was virtuous, modest, and courageous. The new emperor had scarce time to punish the murderers of the late monarch, when he was alarmed by a fresh irruption of the Sarmatians; over whom he gained a signal victory. The Persian monarch also made some attempts upon the empire; but Carus assured his ambassadors, that if their master persisted in his obstinacy, all his fields should shortly be as bare as his own bald head, which he showed them. In consequence of this threat, he marched to the very walls of Ctesiphon, and a dreadful battle ensuing, he once more gained a complete victory. What the result of this success might have been, is not known; for he was shortly after struck dead by lightning in his tent, with many others that were round him. Numerianus, the youngest son, who accompanied his father in this expedition, was inconsolable for his death; and brought such a disorder upon his eyes with weeping, that he was obliged to be carried along with the army, shut up in a close litter. The peculiarity of his situation, after some time, excited the ambition of Aper, his father-in-law, who supposed that he could now, without any great danger, aim at the empire himself. He therefore hired a mercenary villain to murder the emperor in his litter; and the better to conceal the fact, gave out that he was still alive, but unable to endure the light. In this manner was the dead body carried about for some days, Aper continuing to attend it with the utmost appearance of respect, and to take orders as usual. The offensiveness, however, of its smell at length discovered the treachery, and excited an universal uproar throughout the army. In the midst of this tumult, Diocletian, one of the most noted commanders of his time, was chosen emperor, and with his own hand slew Aper; having thus, as it is said, fulfilled a prophecy, which had said, that Diocletian should be emperor after he had slain a boar; alluding to the name of his rival, which signifies a boar. Carinus, the remaining son, did not long survive his father and brother; for giving himself up to his vices, and yet at the same time opposing the new-made emperor, the competitors led their forces into Mœsia; where Diocletian being victorious, Carinus was slain by a tribune of his own army, whose wife he had formerly abused.

508 Diocletian raised to the empire.

Diocletian was a person of mean birth; being accounted, according to some, the son of a scrivener; and of a slave, according to others. He received his name from Dioclea, the town in which he was born; and was about 40 years old when he was elected to the empire. He pardoned all who had joined Carinus, without injuring either their fortunes or honours. Conscious also that the weight of empire was too heavy for one alone to sustain, he took in Maximian, his general, as a partner in the fatigues of duty, making him his equaland companion on the throne. Thus mutually assisting each other, these two continued to live in the strictest friendship; and though somewhat differing in temper (as Maximian was rather a man of vicious inclinations), yet they concurred in promoting the general good, and humbling their enemies. And it must be observed, that there never was a period in which there were more numerous or formidable enemies to oppose.

509 Takes Maximian for his partner.

510 Insurrections, and other calamities.

The peasants and labourers in Gaul made a dangerous insurrection, under the conduct of Amandus and Helianus, but were subdued by Maximian. Achilleus, who commanded in Egypt, proclaimed himself emperor; and it was not without many bloody engagements that he was overcome, and condemned by Diocletian to be devoured by lions. In Africa, the Roman legions, in like manner, joined with many of the natives, seized upon the public revenues, and plundered those who continued in their duty. These were also subdued by Maximian; and, after a long dubious war, constrained to sue for peace. About the same time, a principal commander in Britain, named *Carausius*, proclaimed himself emperor, and possessed himself of the island. To oppose this general's claims, Maximian made choice of Constantius Chlorus, whom he created Cæsar, and married to Theodora his daughter-in-law. He, upon his arrival in Britain, finding Carausius very strong, and continually reinforced from Germany, though proper to come to an accommodation; so that this usurper continued for seven years in quiet possession of the whole island, till he was slain by Alectus, his friend and intimate. About this time also, Narses, king of Persia, began a dangerous war upon the empire, and invaded Mesopotamia. To stop the progress of the enemy upon this quarter, Diocletian made choice of Galerius (surnamed *Armentarius*, from the report of his being born of a cow-herd in Dacia); and he likewise was created Cæsar. His success also, though very doubtful in the beginning, was in the end terminated according to his wishes. The Persians were overcome in a decisive engagement, their camp plundered and taken, and their king's wives and children made prisoners of war. There only remained, of all the enemies of the Roman empire, those who lay to the northward unsubdued. These were utterly unconquerable, as well upon account of their savage fierceness, as the inhospitable severity of the climate and soil from whence they issued. Ever at war with the Romans, they issued forth, when the armies that were to repress their invasions were called away; and upon their return, they as suddenly withdrew into cold, barren, and inaccessible places,

Rome. places, which only themſelves could endure. In this manner the Goths, Sarmatians, Alani, Quadi, &c. poured down in incredible numbers; while every defeat ſeemed but to increaſe their ſtrength and perſeverance. Of theſe, multitudes were taken priſoners, and ſent to people the more ſouthern parts of the empire; ſtill greater numbers were deſtroyed; and though the reſt were driven back to their native foreſts, yet they continued ever mindful of their inveterate enmity, and, like a ſavage beaſt, only continued inactive, till they had licked their wounds for a new encounter.

511 The Chriſtians cruelly perſecuted.

During this interval, as if the external miſeries of the empire were not ſufficient, the tenth and laſt great perſecution was renewed againſt the Chriſtians. This is ſaid to have exceeded all the former in ſeverity: and ſuch was the zeal with which it was purſued, that, in an ancient inſcription, we are informed that they had effaced the name and ſuperſtition of the Chriſtians, and had reſtored and propagated the worſhip of the gods. Their attempts, however, were but the malicious efforts of an expiring party; for Chriſtianity ſhortly after was eſtabliſhed by law, and triumphed over the malice of all its enemies. In the midſt of the troubles raiſed by this perſecution, and of the conteſts that ſtruck at the internal parts of the ſtate, Diocleſian and Maximian ſurpriſed the world by reſigning their dignities on the ſame day, and both retiring into private ſtations. Hiſtorians are much divided concerning the motives that thus induced them to give up thoſe honours which they had purchaſed with ſo much danger. Some aſcribe it to the philoſophical turn of Diocleſian; and others, to his being diſguſted with the obſtinacy of his Chriſtian ſubjects: but Lactantius aſſerts, that he was compelled to it, together with his partner, by Galerius, who coming to Nicomedia, upon the emperor's recovery from a great ſickneſs, threatened him with a civil war in caſe he refuſed to reſign. However, of this we are well aſſured, that he ſtill preſerved a dignity of ſentiment in his retirement, that might induce us to believe he had no other motive for reſignation than the love of quiet, and the conſciouſneſs of his inability to diſcharge on a ſick-bed the duties of a ſovereign. Having retired to his birth-place, he ſpent his time in cultivating his garden, aſſuring his viſitors that then only he began to enjoy the world, when he was thought by the reſt of mankind to forſake it. When alſo ſome attempted to perſuade him to reſume the empire, he replied, That if they knew his preſent happineſs, they would rather endeavour to imitate than diſturb it. In this contented manner he lived ſome time, and at laſt died either by poiſon or madneſs, it is uncertain which. His reign, which continued 20 years, was active and uſeful; and his authority, tinctured with ſeverity, was well adapted to the depraved ſtate of morals at that time.

512 Diocleſian and Maximian reſign.

Maximian, his partner in the empire and in reſignation, was by no means ſo contented with his ſituation. He longed once more for power, and diſturbed the two ſucceeding reigns with various efforts to reſume it; attempting to engage Diocleſian in the ſame deſign. Being obliged to leave Rome, where he had bred great confuſion, he went over into Gaul, where he was kindly received by Conſtantine, the then acknowledged emperor of the weſt. But here alſo continuing his intrigues, and endeavouring to force his own daughter and deſtroy her huſband, he was detected, and condemned to die by whatever death he ſhould think proper; and Lactantius tells us that he choſe hanging.

Rome. 513 Conſtantius Chlorus, and Galerius, emperors.

Upon the reſignation of the two emperors, the two Cæſars whom they had formerly choſen were univerſally acknowledged as their ſucceſſors. Conſtantius Chlorus, who was ſo called from the plainneſs of his complexion, was virtuous, valiant, and merciful. Galerius, on the other hand, was brave, but brutal, incontinent, and cruel. As there was ſuch a diſparity in their tempers, they readily agreed, upon coming into full power, to divide the empire: Conſtantius being appointed to govern the weſtern parts; namely, Italy, Sicily, the greateſt part of Africa, together with Spain, Gaul, Britain, and Germany: Galerius had the eaſtern parts allotted to his ſhare; to wit, Illyricum, Pannonia, Thrace, Macedonia, all the provinces of Greece, and the Leſſer Aſia, together with Egypt, Syria, Judea, and all the countries eaſtward. The greatneſs of the diviſion, however ſoon induced the emperors to take in two partners more, Severus and Maximin, who were made Cæſars, and aſſiſted in the conducting of affairs; ſo that the empire now was under the guidance of four perſons, all inveſted with ſupreme authority.

We are informed but of few particulars of the reign of Conſtantius, except a detail of his character, which appears in every light moſt amiable. He was frugal, chaſte, and temperate. His mercy and juſtice were equally conſpicuous in his treatment of the Chriſtians, whom he would not ſuffer to be injured; and when at length perſuaded to diſplace all the Chriſtian officers of his houſehold that would not change their religion, when ſome of them complied he ſent them away in diſgrace; alleging, that thoſe who were not true to their God, would never be faithful to their prince.

In the ſecond year of his reign he went over into Britain; and leaving his ſon Conſtantine as a kind of hoſtage in the court of his partner in the empire, took up his reſidence at York. He there continued in the practice of his uſual virtues; till falling ſick, he began to think of appointing his ſon for his ſucceſſor. He accordingly ſent for him with all ſpeed; but he was paſt recovery before his arrival: notwithſtanding, he received him with marks of the utmoſt affection, and raiſing himſelf in his bed, gave him ſeveral uſeful inſtructions, particularly recommending the Chriſtians to his protection. He then bequeathed the empire to his care; and crying out, that none but the pious Conſtantine ſhould ſucceed him, he expired in his arms.

In the mean time, Galerius, his partner in the empire, being informed of Conſtantine's advancement, teſtified the moſt ungovernable rage, and was even going to condemn the meſſenger who brought him the account: but being diſſuaded, he ſeemed to acquieſce in what he could not prevent, and ſent him the marks of royalty; but at the ſame time declared Severus emperor, in oppoſition to his intereſts. Juſt about this time alſo, another pretender to the empire ſtarted up. This was Maxentius, a perſon of mean extraction; but very much favoured by the ſoldiers, whom he permitted to pillage at diſcretion. In order to oppoſe Maxentius, Severus led a numerous army towards the gates of Rome; but his ſoldiers conſidering againſt whom they were to fight, immediately abandoned him; and ſhortly after he put an end to his own life, by opening his veins. To revenge his death, Galerius marched into Italy, re-

514 Maxentius uſurps the [illegible]

[illegible] to [illegible] and to destroy the whole [illegible]. His ſoldiers, however, upon approaching the capital began to waver in their reſolutions: wherefore he was obliged to have recourſe to intreaties, imploring them not to abandon him; and, retiring by the ſame gate by which he had advanced, made Licinius, who was originally the ſon of a poor labourer in Dacia, Cæſar, in the room of Severus who was ſlain. This ſeemed to be the laſt act of his power; for ſhortly after he was ſeized with a very extraordinary diſorder in his privates, which baffled all the ſkill of his phyſicians, and carried him off, after he had languiſhed in torments for near the ſpace of a year. His cruelty to the Chriſtians was one of the many crimes alleged againſt him; and their hiſtorians have not failed to aggravate the circumſtances of his death as a judgment from Heaven for his former impiety. However this be, he abated much of his ſeverities againſt them on his deathbed; and revoked thoſe edicts which he had formerly publiſhed, tending to their perſecution, a little before his death.

515 Dreadful death of Galerius.

Conſtantine being thus delivered from his greateſt opponent, might now be conſidered as poſſeſſing more power than any of his rivals who were yet remaining. The empire was at that time divided between him and three others: Maxentius, who governed in Rome, a prince of a cruel diſpoſition, and a ſtedfaſt ſupporter of paganiſm; Licinius, who was adopted by Galerius, and commanded in the eaſt; and likewiſe Maximin, who had formerly been declared Cæſar with Severus, and alſo governed ſome of the eaſtern provinces.

For ſome time all things ſeemed to wear a peaceful appearance; till at length, either ambition, or the tyrannical conduct of Maxentius, induced Conſtantine to engage in an expedition to expel that commander from Rome, and to make the proper preparations for marching into Italy. It was upon this occaſion that he formed a reſolution which produced a mighty change in the politics as well as the morals of mankind, and gave a new turn to the councils of the wiſe, and the purſuits of ambition. One evening, as we are told by Euſebius, the army being upon its march toward Rome, Conſtantine was taken up with various conſiderations upon the fate of futurity things, and the dangers of his approaching expedition: ſenſible of his own incapacity to ſucceed without divine aſſiſtance, he employed his meditations upon the opinions that then were chiefly agitated among mankind, and ſent up his ejaculations to Heaven to inſpire him with wiſdom to chooſe the path he ought to purſue. It was then, as the ſun was declining, that there ſuddenly appeared a pillar of light in the heavens, in the faſhion of a croſs, with this inſcription, ΤΟΥΤΩ ΝΙΚΗ "In this overcome." So extraordinary an appearance did not fail to create aſtoniſhment both in the emperor and his whole army, who conſidered it as their diſpoſitions led them to believe. Thoſe who were attached to paganiſm, prompted by their ſuperſtitions, pronounced it a moſt inauſpicious omen, portending the moſt unfortunate events. But it made a different impreſſion on the emperor's mind; who, as the account goes, was farther encouraged by viſions the ſame night. He therefore, the day following, cauſed a royal ſtandard to be made, like that which he had ſeen in the heavens; and commanded it to be carried before him in his wars, as an enſign of victory and celeſtial protection. After this, he conſulted with ſeveral of the principal teachers of Chriſtianity, and made a public avowal of that ſacred perſuaſion. Rome.

516 Chriſtianity eſtabliſhed and encouraged by Conſtantine.

Conſtantine having thus attached his ſoldiers to his intereſt, who were moſtly of the Chriſtian perſuaſion, loſt no time in entering Italy with 90,000 foot and 8000 horſe; and ſoon advanced to the very gates of Rome. The unfortunate Maxentius, who had long given himſelf up to eaſe and debauchery, now began to make preparations when it was too late. He firſt put in practice all the ſuperſtitious rites which paganiſm taught to be neceſſary; and then conſulted the Sibylline books; from whence he was informed, that on that great day the enemy of Rome ſhould periſh. This prediction, which was equivocal, he applied to Conſtantine; wherefore, leaving all things in the beſt poſture, he advanced from the city with an army of 100,000 foot and 18,000 horſe. The engagement was for ſome time fierce and bloody, till his cavalry being routed, victory declared upon the ſide of his opponent, and he himſelf was drowned in his flight by the breaking down of a bridge as he attempted to croſs the river Tiber. 516 Maxentius defeated and killed.

Conſtantine, in conſequence of this victory, entering the city, diſclaimed all praiſes which the ſenate and people were ready to offer; aſcribing his ſucceſs to a ſuperior power. He even cauſed the croſs, which he was ſaid to have ſeen in the heavens, to be placed at the right of all his ſtatues, with this inſcription: "That under the influence of that victorious croſs, Conſtantine had delivered the city from the yoke of tyrannical power, and had reſtored the ſenate and people of Rome to their ancient authority." He afterwards ordained, that no criminal ſhould for the future ſuffer death by the croſs; which had formerly been the moſt uſual way of puniſhing ſlaves convicted of capital offences. Edicts were ſoon after iſſued, declaring that the Chriſtians ſhould be eaſed from all their grievances, and received into places of truſt and authority. Thus the new religion was ſeen at once to prevail over the whole Roman empire; and as that enormous fabric had been built and guided upon pagan principles, it loſt a great deal of its ſtrength and coherence when thoſe principles were thus at once ſubverted.

Things continued in this ſtate for ſome time, Conſtantine all the while contributing what was in his power to the intereſt of religion, and the revival of learning, which had been long upon the decline, and was almoſt wholly extinct in the empire. But in the midſt of theſe aſſiduities, the peace of the empire was again diſturbed by the preparations of Maximin, who governed in the eaſt, and who, deſirous of a full participation of power, marched againſt Licinius with a very numerous army. In conſequence of this ſtep, after many conflicts, a general engagement enſued, in which Maximin ſuffered a total defeat; many of his troops were cut to pieces, and thoſe that ſurvived ſubmitted to the conqueror. Maximin, however, having eſcaped the general carnage, once more put himſelf at the head of another army, reſolving to try the fortune of the field; but death prevented his deſign. As he died by a very extraordinary kind of madneſs, the Chriſtians, of whom he was the declared enemy, did not fail to aſcribe his end to a judgment from Heaven; but this was the age in which falſe judgments and falſe miracles made up the bulk of their uninſtructive hiſtory. 517 Maximin's defeat and death.

Con-

Rome.

Conſtantine and Licinius thus remaining undiſputed poſſeſſors and partners in the empire, all things promiſed a peaceable continuance of friendſhip and power. However, it was ſoon found, that the ſame ambition that aimed after a part, would be content with nothing leſs than the whole. Pagan writers aſcribe the rupture between theſe two potentates to Conſtantine; while the Chriſtians, on the other hand, impute it wholly to Licinius. Both, perhaps, might have concurred: for Licinius is convicted of having perſecuted Chriſtianity, which was ſo highly favoured by his rival; and Conſtantine is known to have been the firſt to begin the preparations for an open rupture. Both ſides exerted all their power to make oppoſition; and at the head of very formidable armies, came to an engagement near Cybalis, in Pannonia. Conſtantine, previous to the battle, in the midſt of his Chriſtian biſhops, begged the aſſiſtance of Heaven; while Licinius, with equal zeal, called upon the pagan prieſts to intercede with the gods in his favour. Conſtantine, after an obſtinate reſiſtance from the enemy, became victorious; took their camp; and, after ſome time, compelled Licinius to ſue for a truce, which was agreed upon. But this was of no long continuance; for, ſoon after, the war breaking out afreſh, and the rivals coming once more to a general engagement, it proved deciſive. Licinius was entirely defeated, and purſued by Conſtantine into Nicomedia, where he ſurrendered himſelf up to the victor; having firſt obtained an oath that his life ſhould be ſpared, and that he ſhould be permitted to paſs the remainder of his days in retirement. This, however, Conſtantine ſhortly after broke; for either fearing his deſigns, or finding him actually engaged in freſh conſpiracies, he commanded him to be put to death, together with Martian his general, who ſome time before had been created Cæſar.

518 War between Conſtantine and Licinius.

519 Licinius overcome and put to death.

Conſtantine being now ſole monarch of the empire, without a rival to divide his power, or any perſon from whoſe claims he could have the leaſt apprehenſions, reſolved to eſtabliſh Chriſtianity on ſo ſure a baſis, that no new regulations ſhould ſhake it. He commanded that in all the provinces of the empire the orders of the biſhops ſhould be exactly obeyed; a privilege of which, in ſucceeding times, theſe fathers made but a very indifferent uſe. He called alſo a general council of theſe to meet at Nicea, in order to repreſs the hereſies that had already crept into the church, particularly that of Arius. To this place repaired about 318 biſhops, beſides a multitude of preſbyters and deacons, together with the emperor himſelf; who all, to about 17, concurred in condemning the tenets of Arius; who, with his aſſociates, was baniſhed into a remote part of the empire.

Having thus reſtored univerſal tranquillity to the empire, he was not able to ward off the calamities of a more domeſtic nature. As the hiſtories of that period are entirely at variance with each other, it is not eaſy to tell the motives which induced him to put his wife Fauſta and his ſon Criſpus to death. The moſt plauſible account is this: Fauſta the empreſs, who was a woman of great beauty, but of extravagant deſires, had long, though ſecretly, loved Criſpus, Conſtantine's ſon by a former wife. She had tried every art to inſpire this youth with a mutual paſſion; but, finding her more diſtant efforts ineffectual, had even the confidence to make him an open confeſſion of her deſires. This produced an explanation, which was fatal to both. Criſpus received her addreſſes with deteſtation; and ſhe, to be revenged, accuſed him to the emperor. Conſtantine, fired at once with jealouſy and rage, ordered him to die without a hearing; nor did his innocence appear till it was too late for redreſs. The only reparation therefore that remained, was the putting Fauſta, the wicked inſtrument of his former cruelty, to death; which was accordingly executed upon her, together with ſome others who had been accomplices in her falſehood and treachery.

520 Conſtantine puts his wife and ſon to death.

Rome.

But the private misfortunes of a few were not to be weighed againſt evils of a more general nature, which the Roman empire ſhortly after experienced. Theſe aroſe from a meaſure which this emperor conceived and executed, of transferring the ſeat of the empire from Rome to Byzantium, or *Conſtantinople*, as it was afterwards called. Whatever might have been the reaſons which induced him to this undertaking; whether it was becauſe he was offended at ſome affronts he received at Rome, or that he ſuppoſed Conſtantinople more in the centre of the empire, or that he thought the eaſtern parts more required his preſence, experience has ſhown that they were weak and groundleſs. The empire had long before been in the moſt declining ſtate; but this in a great meaſure gave precipitation to its downfall. After this it never reſumed its former ſplendor, but languiſhed.

521 Tranſfers the ſeat of empire to Conſtantinople.

His firſt deſign was to build a city which he might make the capital of the world; and for this purpoſe, he made choice of a ſituation at Chalcedon in Aſia Minor; but we are told, that in laying out the ground-plan, an eagle caught up the line, and flew with it over to Byzantium, a city which lay upon the oppoſite ſide of the Boſphorus. Here, therefore, it was thought expedient to fix the ſeat of the empire; and indeed nature ſeems to have formed it with all the conveniences and all the beauties which might induce power to make it the ſeat of reſidence. It was ſituated on a plain that roſe gently from the water; it commanded that ſtrait which unites the Mediterranean with the Euxine ſea, and was furniſhed with all the advantages which the moſt indulgent climate could beſtow. This city, therefore, he beautified with the moſt magnificent edifices; he divided it into 14 regions; built a capitol, an amphitheatre, many churches, and other public works; and having thus rendered it equal to the magnificence of his idea, he dedicated it in a very ſolemn manner to the God of martyrs; in about two years after, repairing thither with his whole court.

This removal produced no immediate alteration in the government of the empire; the inhabitants of Rome, tho' with reluctance, ſubmitted to the change; nor was there for two or three years any diſturbance in the ſtate, until at length the Goths, finding that the Romans had withdrawn all their garriſons along the Danube, renewed their inroads, and ravaged the country with unheard-of cruelty. Conſtantine, however, ſoon repreſſed their incurſions, and ſo ſtraitened them, that near 100,000 of their number periſhed by cold and hunger. Theſe and ſome other inſurrections being happily ſuppreſſed, the government of the empire was divided as follows. Conſtantine, the emperor's eldeſt ſon, commanded in Gaul and the weſtern provinces; Conſtantius governed Africa and Illyricum; and Conſtans

Rome. Conſtans ruled in Italy. Dalmatius, the emperor's brother, was ſent to defend thoſe parts that bordered upon the Goths; and Annibalianus, his nephew, had the charge of Cappadocia and Armenia Minor. This diviſion of the empire ſtill farther contributed to its downfall: for the united ſtrength of the ſtate being no longer brought to repreſs invaſions, the barbarians fought with ſuperior numbers; and conquered at laſt, though often defeated. Conſtantine, however, did not live to feel theſe calamities. The latter part of his reign was peaceful and ſplendid; ambaſſadors from the remoteſt Indies came to acknowledge his authority; the Perſians, who were ready for freſh inroads, upon finding him prepared to oppoſe, ſent humbly to deſire his friendſhip and forgiveneſs. He was above 60 years old, and had reigned above 30 years, when he found his health began to decline. To obviate the effects of his diſorder, which was an intermitting fever, he made uſe of the warm baths of the city; but receiving no benefit from thence, he removed for change of air to Helenopolis, a city which he had built to the memory of his mother. His diſorder increaſing, he changed again to Nicomedia; where finding himſelf without hopes of recovery, he cauſed himſelf to be baptiſed; and having ſoon after received the ſacrament, he expired, after a memorable and active reign of 32 years. This monarch's character is repreſented to us in very different lights: the Chriſtian writers of that time adorning it with every ſtrain of panegyric; the heathens, on the contrary, loading it with all the virulence of invective. He eſtabliſhed a religion that continues the bleſſing of mankind; but purſued a ſcheme of politics that deſtroyed the empire.

522 Death of Conſtantine.

From the time of Conſtantine to the diviſion of the empire between Valentinian and his brother Valens, the hiſtory of Rome is related under the article CONSTANTINOPLE, where alſo that of the eaſtern part is carried down to the final deſtruction of that city by the Turks.

364 Reign of Valentinian.

In the beginning of the reign of Valentinian, the province of Libya Tripolitana was grievouſly oppreſſed by the barbarians of the deſert, and almoſt equally ſo by Romanus its own governor. His conduct was ſo exceedingly oppreſſive, that the inhabitants ſent a deputation to Valentinian, complaining of their unhappy ſituation, and deſiring redreſs. Palladius was accordingly ſent to inquire into the ſtate of the province; but being gained over by Romanus, he made a falſe report to the emperor; and thus the unhappy province was left a prey to the mercileſs invaders and rapacious governor. During the reſt of this reign the barbarians continued their inroads into the empire; and among others, we find the Saxons now putting in for a ſhare of the ſpoils of the ruined empire: however, their army was at this time entirely cut off. At laſt Valentinian himſelf took the field againſt theſe northern barbarians; and entering the country of the Quadi, deſtroyed all with fire and ſword. The barbarians on this were fain to ſue for peace in a very humble manner; but Valentinian, falling into a great paſſion while ſpeaking to them, threatened to extirpate the whole nation at once. His fury on this occaſion produced an apoplexy, or ſome other mortal diſorder; for he ſuddenly fell down, and being conveyed by his attendants into his chamber, he was ſeized with violent convulſive fits and contortions of all his limbs, in the agonies of which he expired, in the year 375, the 55th of his age, and 12th of his reign. Rome.

After the death of Valentinian, his ſon Gratian took upon him the imperial dignity; ſoon after becoming maſter of the whole empire by the death of Valens. The tranſactions of his reign, and thoſe of his partner Theodoſius, are related under the article CONSTANTINOPLE, n° 77—85. The death of Theodoſius gave the finiſhing ſtroke to the Roman affairs; his ſon Honorius, to whom he left the weſtern empire, being poſſeſſed of no abilities whatever, and indeed ſeeming to have been but very little removed from an idiot. The barbarians appear to have been abundantly ſenſible of the advantages offered them by the death of Theodoſius. He expired in the month of January; and before the acceſſion of ſpring, the Goths were in arms. The barbarian auxiliaries alſo now declared their independency; and along with their countrymen, furiouſly aſſailed the declining empire. The Goths were now headed by an experienced commander, their celebrated king Alaric; who would have proved formidable even in better times of the empire. He firſt over-ran Greece, which he accompliſhed without oppoſition, through the treachery of the governor, who commanded the troops that defended the paſs at Thermopylæ to retire at the approach of the enemy. Athens, Corinth, Argos, Sparta, yielded without reſiſtance; and the whole country was ravaged and deſtroyed by the blood-thirſty barbarians. At laſt, in the year 397, he was oppoſed by Stilicho, the general of Honorius, a man of great valour and experience in war. The Goths were defeated with great loſs, and afterwards beſieged in their camp; but through miſtake or negligence in the Roman commander, they were ſuffered to eſcape, and make themſelves maſters of the province of Epirus. Alaric then, having found means to conclude a treaty with the miniſters of Conſtantinople, Stilicho was obliged to retire.

524 Invaſion of the Goths under Alaric.

Not long after this, Alaric invaded Italy itſelf. The emperor, ſtruck with terror, would have abandoned the country and fled into Gaul: but this diſgraceful and pernicious meaſure was oppoſed by Stilicho; who propoſed to the court of Honorius, at that time at Milan, that if they would maintain their ground during his abſence, he would ſoon return with an army capable of oppoſing the barbarians. This being agreed to, Stilicho immediately ſet out for Rhætia, where the moſt conſiderable body of the Roman forces at that time was, and collected his troops with the utmoſt diligence. But in the mean time Honorius was in the greateſt danger; having been obliged to take refuge in the town of Aſta in Piedmont. To this place the Goths inſtantly laid ſiege, and a capitulation had been propoſed, when the drooping ſpirits of Honorius were at once revived by the arrival of Stilicho, whom he had ſo long expected. The Goths were now beſieged in their turn, and obliged to come to a deciſive battle at Pollentia. The engagement laſted the whole day; but at laſt the Goths were compelled to retreat. Their camp was inſtantly inveſted; their entrenchments forced with great ſlaughter; the wife of Alaric was taken, with all the wealth which had been amaſſed in plundering Greece; while many thouſands of Roman priſoners were releaſed from the moſt deplorable ſlavery. The victory, however, was not ſo deciſive but that Alaric

525 Goths defeated at Pollentia.

Rome. Alaric continued ſtill extremely formidable; and Stilicho choſe rather to conclude a treaty with him, and allow him an annual penſion, than to continue the war with vigour. Alaric, who was not very ſcrupulous in his obſervance of this treaty, in his retreat attempted to make himſelf maſter of the city of Verona: but Stilicho coming up with him near that place, gave him a terrible defeat, in which the loſs was little leſs than it had been at Pollentia; after which he effected a retreat out of Italy, but not without the greateſt difficulty and danger.

Italy being thus happily delivered, Honorius entered Rome in triumph, having Stilicho along with him in the triumphal chariot. On his entry into the city, he aboliſhed the ſhows of gladiators; which, though forbidden by Conſtantine, had been tolerated by his ſucceſſors, and even by Theodoſius himſelf, out of complaiſance to the people, who were beyond meaſure fond of that inhuman diverſion. However, ſoon after, the emperor was obliged to leave the metropolis and retire to Ravenna, in order to ſecure himſelf from the barbarians, who now broke in upon the empire on all ſides. Such multitudes now made their appearance, that it is not a little difficult to account for their ſudden emigration. Mr Gibbon accounts for it from a ſuppoſed revolution in the north-eaſtern parts of China. "The Chineſe annals (ſays he), as they have been interpreted by the learned induſtry of the preſent age, may be uſefully applied to reveal the ſecret and remote cauſes of the fall of the Roman empire. The extenſive territory to the north of the great wall was poſſeſſed, after the flight of the Huns, by the victorious Sienpi; who were ſometimes broken into independent tribes, and ſometimes re-united under a ſupreme chief; till at length ſtyling themſelves *Topa*, or "maſters of the earth," they acquired a more ſolid conſiſtence, and a more formidable power. The Topa ſoon compelled the paſtoral nations of the eaſtern deſert to acknowledge the ſuperiority of their arms: they invaded China in a period of weakneſs and inteſtine diſcord; and theſe fortunate Tartars, adopting the laws and manners of the vanquiſhed people, founded an imperial dynaſty, which reigned near 160 years over the northern provinces of the monarchy. Some generations before they aſcended the throne of China, one of the Topa princes had enliſted in his cavalry a ſlave of the name of *Moko*, renowned for his valour; but who was tempted, by the fear of puniſhment, to deſert his ſtandard, and to range the deſert at the head of 100 followers. This gang of robbers and outlaws ſwelled into a camp, a tribe, a numerous people, diſtinguiſhed by the appellation of *Geougen*; and their hereditary chieftains, the poſterity of Moko the ſlave, aſſumed their rank among the Scythian monarchs. The youth Toulun, the greateſt of his deſcendants, was exerciſed by thoſe misfortunes which are the ſchool of heroes. He bravely ſtruggled with adverſity, broke the imperious yoke of the Topa, and became the legiſlator of his nation, and the conqueror of Tartary. His troops were diſtributed into regular bands of 100 and of 1000 men; cowards were ſtoned to death; the moſt ſplendid honours were propoſed as the reward of valour; and Toulun, who had knowledge enough to deſpiſe the learning of China, adopted only ſuch arts and inſtitutions as were favourable to the military ſpirit of his government. His tents, which he removed in the winter ſeaſon to a more ſouthern latitude, were pitched during the ſummer on the fruitful banks of the Selinga. His conqueſts ſtretched from the Corea far beyond the river Irtiſh. He vanquiſhed, in the country to the north of the Caſpian ſea, the nation of the Huns; and the new title of *Khan*, or *Cagan*, expreſſed the fame and power which he derived from this memorable victory.

Rome.

526 Honorius retires to Ravenna.

527 Mr Gibbon's account of the revolutions in China.

"The chain of events is interrupted, or rather is concealed, as it paſſes from the Volga to the Viſtula, through the dark interval which ſeparates the extreme limits of the Chineſe and of the Roman geography. Yet the temper of the barbarians, and the experience of ſucceſſive emigrations, ſufficiently declare, that the Huns, who were oppreſſed by the arms of the Geougen, ſoon withdrew from the preſence of an inſulting victor. The countries towards the Euxine were already occupied by their kindred tribes, and their haſty flight, which they ſoon converted into a bold attack, would more naturally be directed towards the rich and level plains through which the Viſtula gently flows into the Baltic ſea. The north muſt again have been alarmed and agitated by the invaſion of the Huns; and the nations who retreated before them muſt have preſſed with incumbent weight on the confines of Germany. The inhabitants of thoſe regions which the ancients have aſſigned to the Suevi, the Vandals, and the Burgundians, might embrace the reſolution of abandoning to the fugitives of Sarmatia their woods and moraſſes; or at leaſt of diſcharging their ſuperfluous numbers on the provinces of the Roman empire. About four years after the victorious Toulun had aſſumed the title of *khan of the Geougen*, another barbarian, the haughty Rhodogaſt, or Radagaiſus, marched from the northern extremities of Germany almoſt to the gates of Rome, and left the remains of his army to atchieve the deſtruction of the weſt. The Vandals, the Suevi, and the Burgundians, formed the ſtrength of this mighty hoſt: but the Alani, who had found an hoſpitable reception in their new ſeats, added their active cavalry to the heavy infantry of the Germans; and the Gothic adventurers crowded ſo eagerly to the ſtandard of Radagaiſus, that by ſome hiſtorians he has been ſtyled the *king of the Goths*. Twelve thouſand warriors, diſtinguiſhed above the vulgar by their noble birth or their valiant deeds, glittered in the van; and the whole multitude, which was not leſs than 200,000 fighting men, might be increaſed by the acceſſion of women, of children, and of ſlaves, to the amount of 400,000 perſons. This formidable emigration iſſued from the ſame coaſt of the Baltic which had poured forth the myriads of the Cimbri and Teutones to aſſault Rome and Italy in the vigour of the republic. After the departure of thoſe barbarians, their native country, which was marked by the veſtiges of their greatneſs, long ramparts, and gigantic moles, remained during ſome ages a vaſt and dreary ſolitude; till the human ſpecies was renewed by the powers of generation, and the vacancy was filled up by the influx of new inhabitants. The nations who now uſurp an extent of land which they are unable to cultivate, would ſoon be aſſiſted by the induſtrious poverty of their neighbours, if the government of Europe did not protect the claims of dominion and property.

528 Radagaiſus invades Italy with a prodigious army.

"The correſpondence of nations was in that age ſo

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Rome. imperfect and precarious, that the revolutions of the north might escape the knowledge of the court of Ravenna; and the dark cloud which was collected along the coast of the Palus Mæotis had already burst in thunder upon the banks of the Upper Danube. The emperor of the west, if his name was prefixed to edicts, was known by the public voice to be the pusillanimous inhabitant of the Ravennate dockyard, was terrified with being the object and the spectator of the war. The cities of Rome was intrusted to the counsels and the sword of Stilicho; but that fatal jealousy, which always poisoned the happiness of the empire, rendered it impossible to relieve the fortifications of the Danube, or to prevent, by a vigorous effort, the invasion of the Germans. The hopes of the vigilant minister of Honorius were confined to the defence of Italy. He once more abandoned the provinces; recalled the troops; pressed the new levies, which were reluctantly exacted, and pusillanimously eluded; employed the most efficacious means to arrest or allure the deserters; and offered the gift of freedom, and of two pieces of gold, to all the slaves who would enlist. By these efforts he painfully collected from the subjects of a great empire an army of 30,000 or 40,000 men; which, in the days of Scipio or Camillus, would have been instantly furnished by the free citizens of the territory of Rome. The 30 legions of Stilicho were reinforced by a large body of barbarian auxiliaries; the faithful Alani were personally attached to his service; and the troops of Huns and of Goths, who marched under the banners of their native princes Hulden and Sarus, were animated by interest and resentment to oppose the ambition of Radagaisus. The king of the confederate Germans passed, without resistance, the Alps, the Po, and the Appennine; leaving on one hand the inaccessible palace of Honorius, securely buried among the marshes of Ravenna; and on the other, the camp of Stilicho, who had fixed his head-quarters at Ticinum, or Pavia, but who seems to have avoided a decisive battle till he had assembled his distant forces. Many cities of Italy were pillaged, or destroyed; and the siege of Florence by Radagaisus is one of the earliest events in the history of that celebrated republic, whose firmness checked and delayed the unskilful fury of the barbarians. The senate and people trembled at their approach within 180 miles of Rome; and anxiously compared the danger which they dreaded with the new perils to which they were exposed. Alaric was a Christian and a soldier, the leader of a disciplined army; who understood the laws of war, who respected the sanctity of treaties, and who had been allured, or convinced, by repeated negotiations, to consult the safety of his own fortune in the peace and alliance of the empire. Radagaisus was a stranger to the manners, the religion, and even the language, of the civilized nations of the south. The fierceness of his temper was exasperated by cruel superstition; and it was universally believed, that he had bound himself by a solemn vow to reduce the city into a heap of stones and ashes, and to sacrifice the most illustrious of the Roman senators on the altars of those gods who were appeased by human blood. The public danger, which should have united all private animosities, displayed the inevitable weakness of religious fanaticism. The oppressed votaries of Jupiter and Mercury rejected, in the implacable enemy of Rome, the character of a devout prince, and openly declared, that they were more apprehensive for their altars than for their temples. Even those among the Romans who had relapsed into a secret attachment to their ancient superstition, dissembled their devotion, lest they should participate in the general contempt and hatred which was excited by the avowed infidelity of Julian. Conscious of the decline of their power, they patiently expected the hour of their deliverance; and their reserve was insensibly softened by the alternative of submitting to the yoke of the barbarians, or of the Christians. Florence was reduced to the last extremity; and the fainting courage of the citizens was supported only by the authority of St. Ambrose, who had communicated in a dream the promise of a speedy deliverance. On a sudden they beheld from their walls the banners of Stilicho, who advanced with his united force to the relief of the faithful city; and who soon marked that fatal spot for the grave of the barbarian host. The apparent contradictions of those writers who variously relate the defeat of Radagaisus, may be reconciled without offering much violence to their respective testimonies. Orosius and Augustin, who were intimately connected by friendship and religion, after the miraculous victory ascribe it to the providence of God rather than to the valour of man. They strictly exclude every idea of chance, or even of bloodshed; and positively affirm, that the Romans, whose camp was the scene of plenty and idleness, enjoyed the distress of the barbarians, slowly expiring on the sharp and barren ridge of the hills of Fæsulæ, which rise above the city of Florence. Their extravagant assertion, that not a single soldier of the Christian army was killed, or even wounded, may be dismissed with silent contempt; but the rest of the narrative of Augustin and Orosius is consistent with the state of the war and the character of Stilicho. Conscious that he commanded the last army of the republic, his prudence would not expose it in the open field to the headstrong fury of the Germans. The method of surrounding the enemy with strong lines of circumvallation, which he had twice employed against the Gothic king, was repeated on a larger scale, and with more considerable effect. The examples of Cæsar must have been familiar to the most illiterate of the Roman warriors; and the fortifications of Dyrrhachium, which connected 24 castles by a perpetual ditch and rampart of 15 miles, afforded the model of an entrenchment which might confine and starve the most numerous host of barbarians. The Roman troops had less degenerated from the industry than from the valour of their ancestors; and if the servile and laborious work offended the pride of the soldiers, Tuscany could supply many thousand peasants, who would labour, though perhaps they would not fight, for the salvation of their native country.—The imprisoned multitude of horses and men was gradually destroyed by famine, rather than by the sword; but the Romans were exposed, during the progress of such an extensive work, to the frequent attacks of an impatient enemy. The despair of the hungry barbarians would precipitate them against the fortifications of Stilicho; the general might sometimes indulge the ardour of his brave auxiliaries, who eagerly pressed to assault the camp of the Germans; and these various incidents might produce the sharp and bloody conflicts which dignify the narrative of Zosimus, and the Chronicles of Prosper and Marcellinus. A seasonable supply of men and provisions had been introduced into the walls of Florence; and the famished host of Radagaisus was in its turn besieged. The proud monarch of so many warlike nations, after the loss of his bravest warriors, was reduced to consult either his faith or his capitulation, or to the clemency of Stilicho. But the death of the royal captive, who was ignominiously beheaded, disgraced the triumph of Rome and of Christianity; and the

Rome. 529 Defeated and destroyed by Stilicho.

Rome.

the short delay of his execution was sufficient to brand the conqueror with the guilt of cool and deliberate cruelty. The famished Germans who escaped the fury of the auxiliaries were sold as slaves, at the contemptible price of as many single pieces of gold: but the difference of food and climate swept away great numbers of those unhappy strangers; and it was observed, that the inhuman purchasers, instead of reaping the fruit of their labour, were soon obliged to add to it the expence of interring them. Stilicho informed the emperor and the senate of his success; and deserved a second time the glorious title of *Deliverer of Italy*.

"The fame of the victory, and more especially of the miracle, has encouraged a vain persuasion, that the whole army, or rather nation, of Germans, who migrated from the shores of the Baltic, miserably perished under the walls of Florence. Such indeed was the fate of Radagaisus himself, of his brave and faithful companions, and of more than one-third of the various multitude of Suevi and Vandals, of Alani and Burgundians, who adhered to the standard of their general. The union of such an army might excite our surprise, but the causes of separation are obvious and forcible; they were the pride of birth, the insolence of valour, the jealousy of command, the impatience of subordination, and the obstinate conflict of opinions, of interests, and of passions, among so many kings and warriors, who were untaught to yield or to obey. After the defeat of Radagaisus, two parts of the German host, which must have exceeded the number of 100,000 men, still remained in arms between the Apennine and the Alps, or between the Alps and the Danube. It is uncertain whether they attempted to revenge the death of their general: but their irregular fury was soon diverted by the prudence and firmness of Stilicho, who opposed their march, and facilitated their retreat; who considered the safety of Rome and Italy as the great object of his care, and who sacrificed with too much indifference the wealth and tranquillity of the distant provinces. The barbarians acquired, from the junction of some Pannonian deserters, the knowledge of the country and of the roads; and the invasion of Gaul, which Alaric had designed, was executed by the remains of the great army of Radagaisus.

530 Account of the remainder of the army of Radagaisus.

"Yet if they expected to derive any assistance from the tribes of Germany who inhabited the banks of the Rhine, their hopes were disappointed. The Alemanni preserved a state of inactive neutrality; and the Franks distinguished their zeal and courage in the defence of the empire. In the rapid progress down the Rhine, which was the first act of the administration of Stilicho, he had applied himself with peculiar attention to secure the alliance of the warlike Franks, and to remove the irreconcileable enemies of peace and of the republic. Marcomir, one of their kings, was publicly convicted before the tribunal of the Roman magistrate of violating the faith of treaties. He was sentenced to a mild, but distant exile, in the province of Tuscany; and this degradation of the regal dignity was so far from exciting the resentment of his subjects, that they punished with death the turbulent Sunno, who attempted to revenge his brother, and maintained a dutiful allegiance to the princes who were established on the throne by the choice of Stilicho. When the limits of Gaul and Germany were shaken by the northern emigration, the Franks bravely encountered the single force of the Vandals; who, regardless of the lessons of adversity, had again separated their troops from the standard of their barbarian allies. They paid the penalty of their rashness; and 20,000 Vandals, with their king Godigiselus, were slain in the field of battle. The whole people must have been extirpated, if the squadrons of the Alani, advancing to their relief, had not trampled down the infantry of the Franks; who, after an honourable resistance, were compelled to relinquish the unequal contest. The victorious confederates pursued their march; and on the last day of the year, in a season when the waters of the Rhine were most probably frozen, they entered without opposition the defenceless provinces of Gaul. This memorable passage of the Suevi, the Vandals, the Alani, and the Burgundians, who never afterwards retreated, may be considered as the fall of the Roman empire in the countries beyond the Alps; and the barriers, which had so long separated the savage and the civilized nations of the earth, were from that fatal moment levelled with the ground.

Rome.

531 The Vandals defeated by the Franks.

"While the peace of Germany was secured by the attachment of the Franks and the neutrality of the Alemanni, the subjects of Rome, unconscious of their approaching calamities, enjoyed a state of quiet and prosperity, which had seldom blessed the frontiers of Gaul. Their flocks and herds were permitted to graze in the pastures of the barbarians; their huntsmen penetrated, without fear or danger, into the darkest recesses of the Hercynian wood. The banks of the Rhine were crowned, like those of the Tiber, with elegant houses and well cultivated farms; and if a poet descended the river, he might express his doubt on which side was situated the territory of the Romans. This scene of peace and plenty was suddenly changed into a desert, and the prospect of the smoaking ruins could alone distinguish the solitude of nature from the desolation of man. The flourishing city of Mentz was surprised and destroyed; and many thousand Christians were inhumanly massacred in the church. Worms perished after a long and obstinate siege: Strasburg, Spires, Rheims, Tournay, Arras, Amiens, experienced the cruel oppression of the German yoke; and the consuming flames of war spread from the banks of the Rhine over the greatest part of the 17 provinces of Gaul. That rich and extensive country, as far as the Ocean, the Alps, and the Pyrenees, was delivered to the barbarians, who drove before them, in a promiscuous crowd, the bishop, the senator, and the virgin, laden with the spoils of their houses and altars."

532 Gaul ravaged by the barbarians.

In the midst of these calamities a revolt happened in Britain, where one Constantine, a common soldier, was raised to the imperial throne, merely for the sake of his name. However, he seems to have been a man of considerable abilities, and by no means unfit for the high dignity to which he was raised. He governed Britain with great prosperity; passed over into Gaul and Spain, the inhabitants of which submitted without opposition, being glad of any protector whatever from the barbarians. Honorius, incapable of defending the empire, or repressing the revolt, was obliged to acknowledge him for his partner in the empire. In the mean time, Alaric, with his Goths, threatened a new invasion unless he was paid a certain sum of money. Stilicho is said to have occasioned this demand, and to have insist-

533 Revolt of Constantine, whom Honorius acknowledges as his partner in the empire.

Rome. ed upon ſending him the money he demanded; and this was the cauſe of his diſgrace and death, which happened ſoon after, with the extirpation of his family and friends. Nay, ſuch was the general hatred of this unfortunate miniſter, that the ſoldiers quartered in the cities of Italy no ſooner heard of his death, than they murdered the wives and children of the barbarians whom Stilicho had taken into the ſervice of Honorius. The enraged huſbands went over to Alaric, who made a new demand of money; which not being readily ſent, he laid ſiege to Rome, and would have taken it, had not the emperor complied with his demand. The ranſom of the city was 5000 pounds of gold, 30,000 of ſilver, 4000 ſilk garments, 3000 ſkins dyed purple, and 3000 pounds of pepper. On this occaſion the heathen temples were ſtripped of their remaining ornaments, and among others of the ſtatue of Valour; which the pagans did not fail to interpret as a preſage of the ſpeedy ruin of the ſtate.

534 Stilicho diſgraced and put to death.

Alaric having received this treaſure, departed for a ſhort time: but ſoon after he again blocked up the city with a numerous army; and again an accommodation with Honorius was ſet on foot. However, for ſome reaſons which do not clearly appear, the treaty was broken off, Rome was a third time beſieged, and at laſt taken and plundered. Alaric, when upon the point of breaking into the city, addreſſing his ſoldiers, told them, that all the wealth in it was theirs, and therefore he gave them full liberty to ſeize it; but at the ſame time he ſtrictly enjoined them to ſhed the blood of none but ſuch as they ſhould find in arms; and above all, to ſpare thoſe who ſhould take ſanctuary in the holy places, eſpecially in the churches of the apoſtles St Peter and St Paul; which he named, becauſe they were moſt ſpacious, and conſequently capable of affording an aſylum to great numbers of people. Having given theſe orders, he abandoned the city to his Goths, who treated it no better, according to St Jerome, than the Greeks are ſaid to have treated ancient Troy; for after having plundered it for the ſpace of three, or, as others will have it, of ſix days, they ſet fire to it in ſeveral places; ſo that the ſtately palace of Salluſt, and many other magnificent buildings, were reduced to aſhes; nay, Procopius writes, that there was not in the whole city one houſe left entire; and both St Jerome and Philoſtorgius aſſert, that the great metropolis of the empire was reduced to an heap of aſhes and ruins. Though many of the Goths, purſuant to the orders of their general, refrained from ſhedding the blood of ſuch as made no reſiſtance; yet others, more cruel and blood-thirſty, maſſacred all they met: ſo that the ſtreets in ſome quarters of the city were ſeen covered with dead bodies, and ſwimming in blood. However, not the leaſt injury was offered to thoſe who fled to the churches; nay, the Goths themſelves conveyed thither, as to places of ſafety, ſuch as they were deſirous ſhould be ſpared. Many of the ſtatues of the gods that had been left entire by the emperors as excellent pieces of art, were on this occaſion deſtroyed, either by the Goths, who, though moſtly Arians, were zealous Chriſtians, or by a dreadful ſtorm of thunder and lightning which fell at the ſame time upon the city, as if it had been ſent on purpoſe to complete with them the deſtruction of idolatry, and abolith the ſmall remains of pagan ſuperſtition. However, notwithſtanding theſe accounts, ſome affirm that the city ſuffered very little at this time, not ſo much as when it was taken by Charles V.

535 Rome taken and plundered by Alaric.

Rome. 536

Alaric did not long ſurvive the taking of Rome, being cut off by a violent fit of ſickneſs in the neighbourhood of Rhegium. After his death the affairs of Honorius ſeemed a little to revive by the defeat and death of Conſtantine and ſome other uſurpers; but the provinces of Gaul, Britain, and Spain, were now almoſt entirely occupied by barbarians; in which ſtate they continued till the death of Honorius, which happened in the year 423, after an unfortunate reign of 28 years.

Death of that conqueror.

After ſome uſurpations which took place on the death of Honorius, his nephew Valentinian III. was declared emperor of the weſt, and his mother Placidia regent during his minority. He was ſcarce ſeated on the throne, when the empire was attacked by the Huns under the celebrated Attila. The Romans, however, wretched and degenerate as they were, had they been unanimous, would even yet have been ſuperior to their enemies. The empreſs then had two celebrated generals, Boniface and Aetius; who by their union might have ſaved the empire: but unhappily, through the treachery of Aetius, Boniface was obliged to revolt; and a civil war enſued, in which he loſt his life. Aetius, however, notwithſtanding his treachery, was pardoned, and put at the head of the forces of the empire. He defended it againſt Attila with great ſpirit and ſucceſs, notwithſtanding the deplorable ſituation of affairs, till he was murdered by Valentinian with his own hand, on the ſuſpicion that he aſpired to the empire. But in the mean time the provinces, except Italy itſelf, were totally over-run by the barbarians. Genſeric king of the Vandals ravaged Africa and Sicily; the Goths, Suevi, Burgundians, &c. had taken poſſeſſion of Gaul and Spain; and the Britons were oppreſſed by the Scots and Picts, ſo that they were obliged to call in the Saxons to their aſſiſtance, as is related under the article ENGLAND. In the year 455, Valentinian was murdered by one Maximus, whoſe wife he had raviſhed. Maximus immediately aſſumed the empire; but felt ſuch violent anxieties, that he deſigned to reſign it and fly out of Italy, in order to enjoy the quiet of a private life. However, being diſſuaded from this by his friends, and his own wife dying ſoon after, he forced the Empreſs Eudoxia to marry him. Eudoxia, who had tenderly loved Valentinian, provoked beyond meaſure at being married to his murderer, invited Genſeric king of the Vandals into Italy. This proved a moſt fatal ſcheme: for Genſeric immediately appeared before Rome; a violent tumult enſued, in which Maximus loſt his life; and the city was taken and plundered by Genſeric, who carried off what had been left by the Goths. A veſſel was loaded with coſtly ſtatues; half the covering of the Capitol, which was of braſs plated over with gold; ſacred veſſels enriched with precious ſtones; and thoſe which had been taken by Titus out of the temple of Jeruſalem; all of which were loſt with the veſſel in its paſſage to Africa.

537 Rome taken and plundered by Genſeric,

Nothing could now be more deplorable than the ſtate of the Roman affairs: nevertheleſs, the empire continued to exiſt for ſome years longer; and even ſeemed to revive for a little under Marjorianus, who was declared emperor in 458. He was a man of great courage, and poſſeſſed of many other excellent qualities. He

defeated

Rome. defeated the Vandals, and drove them out of Italy. With great labour he fitted out a fleet, of which the Romans had been long deſtitute. With this he deſigned to paſs over into Africa; but, it being ſurpriſed and burnt by the enemy, he himſelf was ſoon after murdered by one Ricimer a Goth, who had long governed every thing with an abſolute ſway. After the death
538 of Marjorianus, one Anthemius was raiſed to the em-
And by Ricimer. pire: but beginning to counteract Ricimer, the latter openly revolted, beſieged and took Rome; where he committed innumerable cruelties, among the reſt putting to death the unhappy emperor Anthemius, and raiſing one Olybius to the empire. The tranſactions of his reign were very few, as he died ſoon after his acceſſion. On his death one Glycerius uſurped the empire. He was depoſed in 474, and one Julius Nepos had the name of *emperor*. He was driven out the next year by his general Oreſtes, who cauſed his ſon Auguſtus or Auguſtulus to be proclaimed emperor. But the following year, 476, the barbarians who ſerved in the Roman armies, and were diſtinguiſhed with the title of allies, demanded, as a reward for their ſervices, the third part of the lands in Italy; pretending, that the whole country, which they had ſo often defended, belonged of right to them. As Oreſtes refuſed to comply with this inſolent demand, they reſolved to do themſelves juſtice, as they called it; and, openly revolting, choſe one Odoacer for their leader. Odoacer was, according to Ennodius, meanly born, and only a private man in the guards of the emperor Auguſtulus, when the barbarians revolting, choſe him for their leader. However, he is ſaid to have been a man of uncommon parts, equally capable of commanding an army and governing a ſtate. Having left his own country when he was yet very young, to ſerve in Italy, as he was of a ſtature remarkably tall, he was admitted among the emperor's guards, and continued in that ſtation till the preſent year; when, putting himſelf at the head of the barbarians in the Roman pay, who, though of different nations, had, with one conſent choſen him for their leader, he marched againſt Oreſtes and his ſon Auguſtulus, who ſtill refuſed to give them any ſhare of the lands in Italy.

539 As the Roman troops were inferior, both in num-
Total failure of the empire. ber and valour, to the barbarians, Oreſtes took refuge in Pavia, at that time one of the beſt fortified cities in Italy: but Odoacer, inveſting the place without loſs of time, took it ſoon after by aſſault, gave it up to be plundered by the ſoldiers, and then ſet fire to it; which reduced moſt of the houſes, and two churches, to aſhes. Oreſtes was taken priſoner, and brought to Odoacer, who carried him to Placentia, and there cauſed him to be put to death, on the 28th of Auguſt, the day on which he had driven Nepos out of Ravenna, and obliged him to abandon the empire. From Placentia, Odoacer marched ſtraight to Ravenna, where he found Paul, the brother of Oreſtes, and the young emperor Auguſtulus. The former he immediately put to death; but ſparing Auguſtulus, in conſideration of his youth, he ſtripped him of the enſigns of the imperial dignity, and confined him to Lucullanum, a caſtle in Campania; where he was, by Odoacer's orders, treated with great humanity, and allowed an handſome maintenance to ſupport himſelf and his relations. Rome readily ſubmitted to the conqueror, who immediately cauſed himſelf to be proclaimed king of Italy, but would not aſſume the purple, or any other mark of the imperial dignity. Thus failed the very name of an empire in the Weſt. Britain had been long ſince abandoned by the Romans; Spain was held by the Goths and Suevi; Africa, by the Vandals; the Burgundians, Goths, Franks, and Alani, had erected ſeveral tetrarchies in Gaul; at length Italy itſelf, with its proud metropolis, which for ſo many ages had given law to the reſt of the world, was enſlaved by a contemptible barbarian, whoſe family, country, and nation, are not well known to this day. Rome.

From this time, Rome has ceaſed to be the capital of an empire; the territories of the pope, to whom the city is now ſubject, being inconſiderable. The origin of the pope's temporal power, and the revolutions of Italy, are related under the article ITALY; and a ſketch of the ſpiritual uſurpations of the popes may be ſeen under the articles HISTORY, ſect. ii. and REFORMATION; and likewiſe under the various hiſtorical articles as they occur in the courſe of this work.

540 It is thought that the walls of modern Rome take
Deſcription of modern Rome. in nearly the ſame extent of ground as the ancient; but the difference between the number of buildings on this ſpot is very great, one half of modern Rome lying waſte, or occupied with gardens, fields, meadows, and vineyards. One may walk quite round the city in three or four hours at moſt, the circumference being reckoned about 13 Italian miles. With regard to the number of the inhabitants, modern Rome is alſo greatly inferior to the ancient: for, in 1709, the whole of theſe amounted only to 138,568; among which were 40 biſhops, 2686 prieſts, 3559 monks, 1814 nuns, 393 courteſans, about 8000 or 9000 Jews, and 14 Moors, In 1714, the number was increaſed to 143,000. In external ſplendor, and the beauty of its temples and palaces, modern Rome is thought by the moſt judicious travellers to excel the ancient. There was nothing in ancient Rome to be compared with St Peter's church in the modern. That Rome was able to recover itſelf after ſo many calamities and devaſtations, will not be matter of ſurpriſe, if we conſider the prodigious ſums that it has ſo long annually drawn from all countries of the Popiſh perſuaſion. Theſe ſums, though ſtill conſiderable, have been continually decreaſing ſince the Reformation. The ſurface of the ground on which Rome was originally founded is ſurpriſingly altered. At preſent it is difficult to diſtinguiſh the ſeven hills on which it was firſt built, the low grounds being almoſt filled up with the ruins of the ancient ſtreets and houſes, and the great quantities of earth waſhed down from the hills by the violence of the rains. Anciently the ſuburbs extended a vaſt way on all ſides, and made the city appear almoſt boundleſs; but it is quite otherwiſe now, the country about Rome being almoſt a deſert. To this and other cauſes it is owing, that the air is none of the moſt wholeſome, eſpecially during the ſummer heats, when few go abroad in the day-time. No city at preſent in the world ſurpaſſes, or indeed equals, Rome, for the multiplicity of fine fountains, noble edifices, antiquities, curioſities, paintings, ſtatues, and ſculptures. The city ſtands on the Tiber, 10 miles from the Tuſcan ſea, 380 from Vienna, 560 from Paris, 740 from Amſterdam, 810 from London, and 900 from Madrid. The Tiber is ſubject to fre-

Rome. quent inundations, by which it often does great damage. A ſmall part of the city is ſeparated from the other by the river, and is therefore called *Tranſtiere*, or beyond the Tiber. There are ſeveral bridges over the river, a great number of towers on the walls, and 20 gates. The remains of Rome's ancient grandeur conſiſt of ſtatues, coloſſuſes, temples, palaces, theatres, naumachias, triumphal arches, circuſes, columns, obelisks, fountains, aqueducts, mauſoleums, thermæ or hot-baths, and other ſtructures. Of modern buildings, the ſplendid churches and palaces are the moſt remarkable. Mr Addiſon ſays, it is almoſt impoſſible for a man to form in his imagination ſuch beautiful and glorious ſcenes as are to be met with in ſeveral of the Roman churches and chapels. This gentleman tells us alſo, that no part of the antiquities of Rome pleaſed him ſo much as the ancient ſtatues, of which there is ſtill an incredible variety. Next to the ſtatues, he ſays, there is nothing more ſurpriſing than the amazing variety of ancient pillars of ſo many kinds of marble. Rome is ſaid to be well paved; but not well lighted, nor kept very clean. Two-thirds of the houſes are the property of the churches, convents and alms houſes. Proteſtants are not obliged to kneel at the elevation of the hoſt, or at meeting the euchariſt in the ſtreets; and they may have fleſh-meat always at the inns, even during Lent. Here are many academies for promoting arts and ſciences, beſides the univerſity. The carnival here is only during the eight days before Lent, and there are no ſuch ſcenes of riots as at Venice: proſtitutes, however, are publicly tolerated. To maintain good order, there is a body of 600 Sbirri, or Halberdeers, under their barigella, or colonel. There is little or no trade carried on in Rome, but a vaſt deal of money is ſpent by travellers and other ſtrangers. The principal modern ſtructures are the church of St Peter, and the other churches; the aqueducts and fountains; the Vatican, and the other palaces; the Campidolio, where the Roman ſenate reſides, &c. The principal remains of antiquity are the pila miliaria of fine marble; the equeſtrian braſs ſtatue of Marcus Aurelius Antoninus; the marble monument of the emperor Alexander Severus; marble buſts of the emperors and their conſorts; three brick arches of the temple of Peace, built by the emperor Veſpaſian; the triumphal arch of Septimus Severus and of Gallienus; the circus of Antoninus Caracalla; ſome parts of the cloaca-maxima; the columna Antonina, repreſenting the principal actions of Marcus Aurelius; the columna Trajani, or Trajan's pillar; ſome fragments of the curia, or palace of Antoninus Pius, and of Nerva's forum; the mauſoleum of Auguſtus, in the Strada Pontifici; the remains of the emperor Severus's tomb without St John's gate; the pyramid of Caius Cestius near St Paul's gate; the porphyry coffin of St Helen, and the original ſtatue of Conſtantine the Great, in the church of St John of Lateran: a font of oriental granite, in the chapel of St Giovanni in Fonte, ſaid to have been erected by Conſtantine the Great; an Egyptian obeliſk near the church of St Maria Maggiore: the ſtately remains of Diocleſian's baths; the celebrated Pantheon; the obeliſks of Seſoſtris and Auguſtus by the Clementine college; the church of St Paul fuori delle Mura, ſaid to have been built by Conſtantine the Great; the Farneſe Hercules, in white marble, of a Coloſſian ſize and exquiſite workmanſhip, in a court of the Farneſe palace, and an admirable group cut out of one block of marble, in another court of the ſame palace. Beſides theſe there are a great many more, which our bounds will not allow us to take any further notice of. Hero is a great number of rich and well-regulated hoſpitals. Near the church of St Sebaſtiano alle Catacombe, are the moſt ſpacious of the catacombs, where the Chriſtians, who never burned their dead, and ſuch of the Pagan Romans as could not afford the expence of burning, were buried. Along the Via Appia, without St Sebaſtian's gate, were the tombs of the principal families of Rome, which at preſent are uſed for cellars and ſtore-houſes by the gardeners and vine-dreſſers. Romney || Rona.

ROMNEY, a town of Kent in England. It is one of the cinque-port towns, and is ſeated on a marſh of the ſame name, famous for feeding cattle; but the air is very unhealthy. It was once a large and populous place, but the retiring of the ſea has reduced it very much; however, it ſends two members to parliament.

ROMORENTIN, is a ſmall town ſituated on the river Saudre, in the territory of Blaſois in France, famous for its woollen manufacture. It is ſaid to be a very ancient place; and the inhabitants pretend that Cæſar built a tower here, of which there are ſtill ſome conſiderable remains. They have a manufacture of ſerge and cloth, which is uſed for the clothing of the troops.

ROMPEE, or Rompu, in heraldry, is applied to ordinaries that are repreſented as broken; and to chevrons, bends, or the like, whoſe upper points are cut off.

ROMULUS, the founder and firſt king of Rome. See Rome, n° 14.

RONCIGLIONE, is a town of Italy, in the Eccleſiaſtic State, and Patrimony of St Peter, in E. Long. 13. N. Lat. 42. 12. It is a ſmall place, but had a pretty good trade, and was one of the richeſt in the province, while it belonged to the dukes of Parma, which was till 1649, when pope Innocent X. became maſter of it, and it has ever ſince continued in the poſſeſſion of his ſucceſſors.

RONDELETIA, in botany: A genus of the monogynia order, belonging to the pentandria claſs of plants; and in the natural method ranking with thoſe of which the order is doubtful. The Corolla is funnel-ſhaped; the capſule bilocular, inferior, and polyſpermous, roundiſh and crowned.

RONA, one of the Hebrides iſlands, is reckoned about 20 leagues diſtant from the north-eaſt point of Neſs in Lewis—about 1 mile long, and half a mile broad. It has a hill in the weſt part, and is only viſible from Lewis in a fair ſummer's day. There is a chapel in the iſland dedicated to St Ronan, fenced with a ſtone wall round it. This church the natives take care to keep very neat and clean, and ſweep it every day. There is an altar in it, on which there lies a big plank of wood about ten feet long. Every foot has a hole in it, and in every hole is a ſtone, to which the natives aſcribe ſeveral virtues; one of them is ſingular (as they ſay) for promoting ſpeedy delivery to a woman in travel. The inhabitants are extremely ignorant, and very ſuperſtitious. See *Martin's Deſcription.*

RON-

Ronſard. RONSARD (Peter de) was born at the caſtle of Poiſſoniere in Vendomois in 1524. He was deſcended of a noble family, and was educated at Paris in the college of Navarre. Academical purſuits not ſuiting his genius, he left college, and became page to the duke of Orleans, who reſigned him to James Stuart, king of Scots, married to Magdalene of France. Ronſard continued in Scotland with King James upwards of two years, and afterwards went to France, where he was employed by the duke of Orleans in ſeveral negociations. He accompanied Lazarus de Baif to the diet of Spires. Having from the converſation of this learned man imbibed a paſſion for the belles-lettres, he ſtudied the Greek language with Baif's ſon under Dorat. It is reported of Ronſard, that his practice was to ſtudy till two o'clock in the morning; and when he went to bed, to awaken Baif, who reſumed his place. The muſes poſſeſſed in his eyes an infinity of charms; and he cultivated them with ſuch ſucceſs, that he acquired the appellation of the *Prince of the Poets* of his time. Henry II. Francis II. Charles IX. and Henry III. loaded him with favours. Having gained the firſt prize of the *Jeux Floraux*, they thought the reward promiſed below the merit of the work, and the reputation of the poet. The city of Toulouſe cauſed a Minerva of maſſy ſilver of conſiderable value to be made and ſent to him. This preſent was accompanied with a decree declaring him *The French Poet*, by way of diſtinction. Ronſard afterwards made a preſent of his Minerva to Henry II. and this monarch appeared as much elated with this mark of the poet's eſteem for him, as the poet himſelf could have been had he received the preſent from his ſovereign. Mary, the beautiful and unfortunate queen of Scots, who was equally ſenſible of his merit with the Touloneſe, gave him a very rich ſet of table-plate, among which was a veſſel in the form of a roſe-buſh, repreſenting Mount Parnaſſus, on the top of which was a Pegaſus with this inſcription:

A Ronſard, l'Apollon de la ſource des muſes.

From the above two anecdotes of him may eaſily be inferred the reputation in which he was held, and which he continued to keep till Malherbe appeared. His works poſſeſs both invention and genius; but his affectation of everywhere thruſting in his learning, and of forming words from the Greek, the Latin, and the different provincialiſms of France, has rendered his verſification diſagreeable and often unintelligible.

Ronſard, dit Deſpréaux, par une autre méthode,
Reglant tout, brouilla tout, fit un art à ſa mode;
Et toutefois long temps eut un heureux deſtin;
Mais ſa muſe, en François parlant Grec et Latin,
Vit dans l'âge ſuivant, par un retour groteſque,
Tomber de ſes grands mots le faſte pédanteſque.

He wrote hymns, odes, a poem called the *Franciad*, eclogues, epigrams, ſonnets, &c. In his odes he takes bombaſt for poetical raptures. He wiſhes to imitate Pindar; and labouring too much for lofty expreſſions, he loſes himſelf in a cloud of words. He is obſcure and harſh to the laſt degree: faults which he might eaſily have avoided by ſtudying the works of Marot, who had before he wrote brought French poetry very near to perfection. "Marot's turn and ſtyle of compoſition are ſuch (ſays Bruyere), that he ſeems to have written after Ronſard: there is hardly any difference, except in a few words, between Marot and him. Ronſard, and the authors his contemporaries, did more diſſervice than good to ſtyle: they checked its courſe in the advances it was making towards perfection, and had like to have prevented its ever attaining it. It is ſurpriſing that Marot, whoſe works are ſo natural and eaſy, did not make Ronſard, who was fired with the ſtrong enthuſiaſm of poetry, a greater poet than either Ronſard or Marot." But what could be expected from a man who had ſo little taſte, that he called Marot's works 'a dunghill, from which rich grains of gold by induſtrious working might be drawn?' As a ſpecimen of our author's intolerable and ridiculous affectation of learning, which we have already cenſured, Boileau cites the following verſe of Ronſard to his miſtreſs: *Eſtes-vous pas ma ſeule entelechie?* 'are not you my only entelechia?' Now *entelechia* is a word peculiar to the peripatetic philoſophy, the ſenſe of which does not appear to have ever been fixed. Hermalaus Barbarus is ſaid to have had recourſe to the devil, in order to know the meaning of this new term uſed by Ariſtotle; but he did not gain the information he wanted, the devil, probably to conceal his ignorance, ſpeaking in a faint and whiſpering ſort of voice. What could Ronſard's miſtreſs therefore, or even Ronſard himſelf, know of it; and, what can excuſe in a man of real genius, the low affectation of uſing a learned term, becauſe in truth nobody could underſtand it. He has, however, ſome pieces not deſtitute of real merit; and there are perhaps few effuſions of the French muſe more truely poetical than his *Four Seaſons of the Year*, where a moſt fertile imagination diſplays all its riches.

Ronſard, though it is doubtful whether he ever was in orders, held ſeveral benefices in commendam; and he died at Saint-Coſme-les-Tours, one of theſe, December 27. 1585, being then 61 years of age. He appeared more ridiculous as a man than as a poet: he was particularly vain. He talked of nothing but his family and his alliances with crowned heads. In his panegyrics, which he addreſſes to himſelf without any ceremony, he has the vanity to pretend, that from *Ronſard* is derived the word *Roſignol*, to denote both a muſician and a poet together. He was born the year after the defeat of Francis I. before Pavia: "Juſt as heaven (ſaid he) wiſhed to indemnify France for the loſſes it had ſuſtained at that place." He bluſhed not to tell of his intrigues. All the ladies ſought after him; but he never ſaid that any of them gave him a denial of their favours. His immoderate indulgence in pleaſure, joined to his literary labours, ſerved to haſten his old age. In his 50th year he was weak and valetudinary, and ſubject to attacks of the gout. He retained his wit, his vivacity, and his readineſs at poetic compoſition, to his laſt moments. Like all thoſe who aſpire after public eſteem, he had a great number of admirers and ſome enemies. Though Melin de Saint-Gelais railed at him continually, Rabelais was the perſon whom he moſt dreaded. He took always care to inform himſelf where that jovial rector of Meudon went, that he might not be found in the ſame place with him. It is reported, that Voltaire acted a ſimilar part with regard to Peron*, of whoſe extemporary ſallies and *bon mots* he was much afraid.

Ronſard.

* See Peron.

land. Ronſard's poems appeared in 1567 at Paris in 6 vols 4to, and in 1604 in 10 vols 12mo.

ROOD, a quantity of land equal to 40 ſquare perches, or the fourth part of an acre.

ROOF, expreſſes the covering of a houſe or building, by which its inhabitants or contents are protected from the injuries of the weather. It is perhaps the eſſential part of a houſe, and is frequently uſed to expreſs the whole. To *come under a perſon's roof*, is to enjoy his protection and ſociety, to dwell with him. *Tectum* was uſed in the ſame ſenſe by the Romans. To be within our walls rather expreſſes the being in our poſſeſſion: a roof therefore is not only an eſſential part of a houſe, but it even ſeems to be its characteriſtic feature. The Greeks, who have perhaps excelled all nations in taſte, and who have given the moſt perfect model of architectonic ordonnance within a certain limit, never erected a building which did not exhibit this part in the diſtincteſt manner; and though they borrowed much of their model from the orientals, as will be evident to any who compares their architecture with the ruins of Perſepolis, and of the tombs in the mountains of Sciras, they added that form of roof which their own climate taught them was neceſſary for ſheltering them from the rains. The roofs in Perſia and Arabia are flat, but thoſe of Greece are without exception ſloping. It ſeems therefore a groſs violation of the true principles of taſte in architecture (at leaſt in the regions of Europe), to take away or to hide the roof of a houſe; and it muſt be aſcribed to that rage for novelty which is ſo powerful in the minds of the rich. Our anceſtors ſeemed to be of a very different opinion, and turned their attention to the ornamenting of their roofs as much as any other part of a building. They ſhowed them in the moſt conſpicuous manner, running them up to a great height, broke them into a thouſand fanciful ſhapes, and ſtuck them full of highly dreſſed windows. We laugh at this, and call it Gothic and clumſy; and our great architects, not to offend any more in this way, conceal the roof altogether by parapets, baluſtrades, and other contrivances. Our forefathers certainly did offend againſt the maxims of true taſte, when they enriched a part of a houſe with marks of elegant habitation, which every ſpectator muſt know to be a cumberſome garret: but their ſucceſſors no leſs offend, who take off the cover of the houſe altogether, and make it impoſſible to know whether it is not a mere ſkreen or colonnade we are looking at.

Error of Sir Chriſtopher Wren in the roof of St Paul's London.

We cannot help thinking that Sir Chriſtopher Wren erred when he ſo induſtriouſly concealed the roof of St Paul's church in London. The whole of the upper order is a mere ſcreen. Such a quantity of wall would have been intolerably offenſive, had he not given it ſome appearance of habitation by the mock windows or niches. Even in this ſtate it is gloomy, and it is odd, and is a puzzle to every ſpectator—There ſhould be no puzzle in the deſign of a building any more than in a diſcourſe. It has been ſaid that the double roof of the great churches which have aiſles is an incongruity, looking like a houſe ſtanding on the top of another houſe. But there is not the leaſt occaſion for ſuch a thought. We know that the aiſle is a ſhed, a cloiſter. Suppoſe only that the lower roof or ſhed is hidden by a baluſtrade, it then becomes a portico, againſt which the connoiſſeur has no objection: yet there is no difference; for the portico muſt have a cover, otherwiſe it is neither a ſhed, cloiſter, nor portico, any more than a building without a roof is a houſe. A houſe without a viſible roof is like a man abroad without his hat; and we may add, that the whim of concealing the chimneys, now ſo faſhionable, changes a houſe to a barn or ſtore-houſe. A houſe ſhould not be a copy of any thing. It has a title to be an original; and a ſcreen-like houſe and a pillar-like candleſtick are ſimilar ſoleciſms in taſte. Roof.

Little attention paid by architects to this part of a building.

The architect is anxious to preſent a fine object, and a very ſimple outline diſcuſſes all his concerns with the roof. He leaves it to the carpenter, whom he frequently puzzles (by his arrangements) with coverings almoſt impoſſible to execute. Indeed it is ſeldom that the idea of a roof is admitted by him into his great compoſitions; or if he does introduce it, it is from mere affectation, and we may ſay pedantry. A pediment is frequently ſtuck up in the middle of a grand front, in a ſituation where a roof cannot perform its office; for the rain that is ſuppoſed to flow down its ſides, muſt be received on the top of the level buildings which flank it. This is a manifeſt incongruity. The tops of dreſſed windows, trifling porches, and ſometimes a projecting portico, are the only ſituations in which we ſee the figure of a roof correſpond with its office. Having thus loſt ſight of the principle, it is not ſurpriſing that the draughtſman (for he ſhould not be called architect) runs into every whim: and we ſee pediment within pediment, a round pediment, a hollow pediment, and the greateſt of all abſurdities, a broken pediment. Nothing could ever reconcile us to the ſight of a man with a hat without its crown, becauſe we cannot overlook the uſe of a hat.

Advantages of a high pitched roof.

But when one builds a houſe, ornament alone will not do. We muſt have a cover; and the enormous expence and other great inconveniences which attend the concealment of this cover by parapets, baluſtrades, and ſcreens, have obliged architects to conſider the pent roof as admiſſible, and to regulate its form. Any man of ſenſe, not under the influence of prejudice, would be determined in this by its fitneſs for anſwering its purpoſe. A high pitched roof will undoubtedly ſhoot off the rains and ſnows better than one of a lower pitch. The wind will not ſo eaſily blow the dropping rain in between the ſlates, nor will it have ſo much power to ſtrip them off. A high pitched roof will exert a ſmaller thruſt on the walls, both becauſe its ſtrain is leſs horizontal, and becauſe it will admit of lighter covering. But it is more expenſive, becauſe there is more of it. It requires a greater ſize of timbers to make it equally ſtrong, and it expoſes a greater ſurface to the wind.

Remarks on the changes in the pitch of roofs.

There have been great changes in the pitch of roofs: our forefathers made them very high, and we make them very low. It does not, however, appear, that this change has been altogether the effect of principle. In the ſimple unadorned habitations of private perſons, every thing comes to be adjuſted by an experience of inconveniences which have reſulted from too low pitched roofs; and their pitch will always be nearly ſuch as ſuits the climate and covering. Our architects, however, go to work on different principles. Their profeſſed aim is to make a beautiful object. The ſources of the pleaſures ariſing from what we call *taſte* are ſo various, ſo complicated, and even ſo whimſical, that it

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Roof.

is almoſt in vain to look for principle in the rules adopted by our profeſſed architects. We cannot help thinking, that much of their practice reſults from a *pedantic* veneration for the beautiful productions of Grecian architecture. Such architects as have written on the principles of the art in reſpect of proportions, or what they call the ORDONNANCE, are very much puzzled to make a chain of reaſoning; and the moſt that they have made of the Greek architecture is, that it exhibits a nice adjuſtment of ſtrength and ſtrain. But when we conſider the extent of this adjuſtment, we find that it is wonderfully limited. The whole of it conſiſts of a baſement, a column, and an entablature; and the entablature, it is true, exhibits ſomething of a connection with the framework and roof of a wooden building; and we believe that it really originated from this in the hands of the orientals, from whom the Greeks certainly borrowed their forms and their combinations. We could eaſily ſhow in the ruins of Perſepolis, and among the tombs in the mountains (which were long prior to the Greek architecture), the fluted column, the baſe, the Ionic and Corinthian capital, and the Doric arrangement of lintels, beams, and rafters, all derived from unqueſtionable principle. The only addition made by the Greeks was the pent roof; and the changes made by them in the ſubordinate forms of things are ſuch as we ſhould expect from their exquiſite judgment of beauty.

7 And of the Greek architecture of them.

But the whole of this is very limited; and the Greeks, after making the roof a chief feature of a houſe, went no farther, and contented themſelves with giving it a ſlope ſuited to their climate. This we have followed, becauſe in the milder climates we have no cogent reaſon for deviating from it; and if any architect ſhould deviate greatly in a building where the outline is exhibited as beautiful, we ſhould be diſguſted; but the diſguſt, though felt by almoſt every ſpectator, has its origin in nothing but habit. In the profeſſed architect or man of education, the diſguſt ariſes from pedantry: for there is not ſuch a cloſe connection between the form and uſes of a roof as ſhall give preciſe determinations; and the mere form is a matter of indifference.

8 Difference between the ancient Greeks and modern roofs.

We ſhould not therefore reprobate the high-pitched roofs of our anceſtors, particularly on the continent of Europe. It is there where we ſee them in all the extremity of the faſhion, and the taſte is by no means exploded as it is in England. A baronial caſtle in Germany and France is ſeldom rebuilt in the pure Greek ſtyle, or even like the modern houſes in Britain; the high-pitched roofs are retained. We ſhould not call them Gothic, and ugly becauſe Gothic, till we ſhow their principle to be falſe or taſteleſs. Now we apprehended that it will be found quite the reverſe; and that though we cannot bring ourſelves to think them beautiful, we ought to think them ſo. The conſtruction of the Greek architecture is a transference of the practices that are neceſſary in a wooden building to a building of ſtone. To this the Greeks have adhered, in ſpite of innumerable difficulties. Their marble quarries, however, put it in their power to retain the proportions which habit had rendered agreeable. But it is next to impoſſible to adhere to theſe proportions with freeſtone or brick, when the order is of magnificent dimenſions. Sir Chriſtopher Wren ſaw this; for his mechanical knowledge was equal to his taſte. He compoſed the front of St Paul's church in London of two orders, and he coupled his columns; and ſtill the lintels which form the architrave are of ſuch length that they could carry no additional weight, and he was obliged to truſs them behind. Had he made but one order, the architrave could not have carried its own weight. It is impoſſible to execute a Doric entablature of this ſize in brick. It is attempted in a very noble front, the Academy of Arts in St Peterſburgh. But the architect was obliged to make the multules and other projecting members of the corniche of granite, and many of them broke down by their own weight.

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9 And the effect of our uſing ſtone.

Here is ſurely an error in principle. Since ſtone is the chief material of our buildings, ought not the members of ornamented architecture to be refinements on the eſſential and unaffected parts of a ſimple ſtone-building. There is almoſt as much propriety in the architecture of India, where a dome is made in imitation of a lilly or other flower inverted, as in the Greek imitation of a wooden building. The principles of maſonry, and not of carpentry, ſhould be ſeen in our architecture, if we would have it according to the rules of juſt taſte. Now we affirm that this is the characteriſtic feature of what is called the Gothic architecture. In this no dependence is had on the tranſverſe ſtrength of ſtone. No lintels are to be ſeen; no extravagant projections. Every ſtone is preſſed to its neighbours, and none is expoſed to a tranſverſe ſtrain. The Greeks were enabled to execute their coloſſal buildings only by uſing immenſe blocks of the hardeſt materials. The Norman maſon could raiſe a building to the ſkies without uſing a ſtone which a labourer could not carry to the top on his back. Their architects ſtudied the principles of equilibrium; and having attained a wonderful knowledge of it, they indulged themſelves in exhibiting remarkable inſtances. We call this falſe taſte, and ſay that the appearance of inſecurity is the greateſt fault. But this is owing to our habits: our thoughts may be ſaid to run into a wooden train, and certain ſimple maxims of carpentry are familiar to our imagination; and in the careful adherence to theſe conſiſts the beauty and ſymmetry of the Greek architecture. Had we been as much habituated to the equilibrium of preſſure, this apparent inſecurity would not have met our eye: we would have perceived the ſtrength, and we ſhould have reliſhed the ingenuity.

10 Rational nature of the Gothic architecture.

The Gothic architecture is perhaps intitled to the name of rational architecture, and its beauty is founded on the characteriſtic diſtinction of our ſpecies. It deſerves cultivation: not the pitiful, ſervile, and unſkilled copying of the monuments; this will produce incongruities and abſurdities equal to any that have crept into the Greek architecture: but let us examine with attention the nice diſpoſition of the groins and ſpaundrels; let us ſtudy the tracery and knots, not as ornaments, but as uſeful members; let us obſerve how they have made their walls like honey-combs, and admire their ingenuity as we pretend to admire the inſtinct infuſed by the great architect into the bee. All this cannot be underſtood without mechanical knowledge; a thing which few of our profeſſional architects have any ſhare of. Thus would architectonic taſte be a mark of ſkill; and the perſon who preſents the deſign of a building would know how to execute it, without commiting it entirely to the maſon and carpenter.

Theſe obſervations are not a digreſſion from our ſubject.

Roof. ject. The ſame principles of mutual preſſure and equi- Roof.
librium have a place in roofs and many wooden edifices; and if they had been as much ſtudied as the Normans and barbarous nations ſeem to have ſtudied ſuch of them as were applicable to their purpoſes, we might have produced wooden buildings as far ſuperior to what we are familiarly acquainted with, as the bold and wonderful arches and remaining in Europe are ſuperior to the mean productions of our ſtone architecture. The ceintres uſed in building the bridge of Orleans and the corn-market of Paris, are late inſtances of what may be done in this way. The laſt mentioned is a dome of 210 feet diameter, built of fir planks; and there is not a piece of timber in it more than nine feet long, a foot broad, and three inches thick.

11 The Norman architects frequently roofed with ſtone. Their wooden roofs were in general very ſimple, and their propoſed aim was to diſpenſe with them altogether. Fond of their own ſcience, they copied nothing from a wooden building, and ran into a ſimilar fault with the ancient Greeks. The parts of their buildings which were neceſſarily of timber were made to imitate ſtone-buildings; and Gothic ornament conſiſts in cramming every thing full of arches and ſpaundrels. Nothing elſe is to be ſeen in their timber-works, nay even in their ſculpture. Look at any of the maces or ſceptres ſtill to be found about the old cathedrals; they are ſilver ſteeples.

12 Origin of the diſpute between the maſons and carpenters in ancient times. But there appears to have been a rivalſhip in old times between the maſons and the carpenters. Many of the baronial halls are of prodigious width, and are roofed with timber: and the carpenters appeared to have borrowed much knowledge from the maſons of thoſe times, and their wide roofs are frequently conſtructed with great ingenuity. Their aim, like the maſons, was to throw a roof over a very wide building without employing great logs of timber. We have ſeen roofs 60 feet wide, without having a piece of timber in it above 10 feet long and 4 inches ſquare. The Parliament Houſe and Tron Church of Edinburgh, the great hall of Tarnaway caſtle near Elgin, are ſpecimens of thoſe roofs. They are very numerous on the continent. Indeed Britain retains few monuments of private magnificence. Ariſtocratic ſtate never was ſo great there; and the rancour of the civil wars gave moſt of the performances of the carpenter to the flames. Weſtminſter-hall exhibits a ſpecimen of the falſe taſte of the Norman roofs. It contains the eſſential parts indeed, very properly diſpoſed; but they are hidden, or intentionally covered, with what is conceived to be ornamental; and this is an imitation of ſtone arches, crammed in between ſlender pillars which hang down from the principal frames trufſes, or rafters. In a pure Norman roof, ſuch as Tarnaway hall, the eſſential parts are exhibited as things underſtood, and therefore reliſhed. They are refined and ornamented; and it is here that the inferior kind of taſte or the want of it may appear. And here we do not mean to defend all the whims of our anceſtors; but we aſſert that it is no more neceſſary to conſider the members of a roof as things to be concealed like a garret or priry, than the members of a ceiling, which form the moſt beautiful part of the Greek architecture. Should it be ſaid that a roof is only a thing to keep off the rain, it may be anſwered, that a ceiling is only to keep off the duſt, or the floor to be trodden under foot, and that we ſhould have neither compartments in the one nor inlaid work or carpets on the other. The ſtructure of a roof may therefore be exhibited with propriety, and made an ornamental feature. This has been done even in Italy. The church of St Maria Maggiore in Rome and ſeveral others are ſpecimens: but it muſt be acknowledged, that the forms of the principal frames of theſe roofs, which reſemble thoſe of our modern buildings, are very unfit for agreeable ornament. As we have already obſerved, our imaginations have not been made ſufficiently familiar with the principles, and we are rather alarmed than pleaſed with the appearance of the immenſe logs of timber which form the couples of theſe roofs, and hang over our heads with every appearance of weight and danger. It is quite otherwiſe with the ingenious roofs of the German and Norman architects. Slender timbers, interlaced with great ſymmetry, and thrown by neceſſity into figures which are naturally pretty, form altogether an object which no carpenter can view without pleaſure. And why ſhould the gentleman refuſe himſelf the ſame pleaſure of beholding ſcientific ingenuity?

13 Neceſſity of ſcience in forming roofs; The roof is in fact the part of the building which requires the greateſt degree of ſkill, and where ſcience will be of more ſervice than in any other part. The architect ſeldom knows much of the matter, and leaves the taſk to the carpenter. The carpenter conſiders the framing of a great roof as the touchſtone of his art; and nothing indeed tends ſo much to ſhow his judgement and his fertility of reſource.

It muſt therefore be very acceptable to the artiſt to have a clear view of the principles by which this difficult problem may be ſolved in the beſt manner, ſo that the roof may have all the ſtrength and ſecurity that can be wiſhed for, without an extravagant expence of timber and iron. We have ſaid that mechanical ſcience can give great aſſiſtance in this matter. We may add that the framing of carpentry, whether for roofs, floors, or any other purpoſe, affords one of the moſt elegant and moſt ſatisfactory applications which can be made of mechanical ſcience to the arts of common life. Unfortunately the practical artiſt is ſeldom poſſeſſed even of the ſmall portion of ſcience which would almoſt inſure his practice from all riſk of failure; and even our moſt experienced carpenters have ſeldom any more knowledge than what ariſes from their experience and natural ſagacity. The moſt approved author in our language is Price in his Britiſh Carpenter. Mathurin Jouſſe is in like manner the author moſt in repute in France; and the publications of both theſe authors are void of every appearance of principle. It is not uncommon to ſee the works of carpenters of the greateſt reputation tumble down, in conſequence of miſtakes from which the moſt elementary knowledge would have ſaved them.

14 And the little attention hitherto paid to it.

15 Purpoſe of this article. We ſhall attempt, in this article, to give an account of the leading principles of this art in a manner ſo familiar and palpable, that any perſon who knows the common properties of the lever, and the compoſition of motion, ſhall ſo far underſtand them as to be able, on every occaſion, ſo to diſpoſe his materials, with reſpect to the ſtrains to which they are to be expoſed, that he ſhall always know the effective ſtrain on every piece, and

ſhall,

Roof.

shall, in most cases, be able to make the disposition such as to derive the greatest possible advantage from the materials which he employs.

16 Principles which regulate the strength of the materials.

It is evident that the whole must depend on the principles which regulate the strength of the materials, relative to the manner in which this strength is exerted, and the manner in which the strain is laid on the piece of matter. With respect to the first, this is not the proper place for considering it, and we must refer the reader to the article *Strength of Materials in Mechanics*. We shall just borrow from that article two or three propositions suited to our purpose.

The force with which the materials of our edifices, roofs, floors, machines, and framings of every kind, resist being broken or crushed, or pulled asunder, is, immediately or ultimately, the cohesion of their particles. When a weight hangs by a rope, it tends either immediately to break all the fibres, overcoming the cohesion among the particles of each, or it tends to pull one parcel of them from among the rest, with which they are joined. This union of the fibres is brought about by some kind of gluten, or by twisting, which causes them to bind each other so hard that any one will break rather than come out, so much is it withheld by friction. The ultimate resistance is therefore the cohesion of the fibre; the force or strength of all fibrous materials, such as timber, is exerted in much the same manner. The fibres are either broken or pulled out from among the rest. Metals, stone, glass, and the like, resist being pulled asunder by the simple cohesion of their parts.

The force which is necessary for breaking a rope or wire is a proper measure of its strength. In like manner, the force necessary for tearing directly asunder any rod of wood or metal, breaking all its fibres, or tearing them from among each other, is a proper measure of the united strength of all these fibres. And it is the simplest strain to which they can be exposed, being just equal to the sum of the forces necessary for breaking or disengaging each fibre. And, if the body is not of a fibrous structure, which is the case with metals, stones, glass, and many other substances, this force is still equal to the simple sum of the cohesive forces of each particle which is separated by the fracture. Let us distinguish this mode of exertion of the cohesion of the body by the name of its Absolute Strength.

When solid bodies are, on the contrary, exposed to great compression, they can resist only to a certain degree. A piece of clay or lead will be squeezed out; a piece of freestone will be crushed to powder; a beam of wood will be crippled, swelling out in the middle, and its fibres lose their mutual cohesion, after which it is easily crushed by the load. A notion may be formed of the manner in which these strains are resisted by conceiving a cylindrical pipe filled with small shot, well shaken together, so that each spheriele is lying in the closest manner possible, that is, in contact with six others in the same vertical plane (this being the position in which the shot will take the least room). Thus each touches the rest in six points: Now suppose them all united, in these six points only, by some cement. This assemblage will stick together and form a cylindrical pillar, which may be taken out of its mould. Suppose this pillar standing upright, and loaded above. The supports arising from the cement act obliquely, and the load tends either to force them asunder laterally, or to make them slide on each other: either of these things happening, the whole is crushed to pieces. The resistance of fibrous materials to such a strain is a little more intricate, but may be explained in a way very similar.

Roof.

A piece of matter of any kind may also be destroyed by wrenching or twisting it. We can easily form a notion of its resistance to this kind of strain by considering what would happen to the cylinder of small shot if treated in this way.

And lastly, a beam, or a bar of metal, or a piece of stone or other matter, may be broken transversely. This will happen to a rafter or joist supported at the ends when overloaded, or to a beam having one end stuck fast in a wall and a load laid on its projecting part. This is the strain to which materials are most commonly exposed in roofs; and, unfortunately, it is the strain which they are the least able to bear; or rather it is the manner of application which causes an external force to excite the greatest possible immediate strain on the particles. It is against this that the carpenter must chiefly guard, avoiding it when in his power, and, in every case, diminishing it as much as possible. It is necessary to give the reader a clear notion of the great weakness of materials in relation to this transverse strain. But we shall do nothing more, referring him to the articles Strain, Stress, Strength.

17 Their weakness in relation to transverse strains.

Let ACBD (fig. 1.) represent the side of a beam projecting horizontally from a wall in which it is firmly fixed, and let it be loaded with a weight W appended to its extremity. This tends to break it; and the least reflection will convince any person that if the beam is equally strong throughout, it will break in the line CD, even with the surface of the wall. It will open at D, while C will serve as a sort of joint, round which it will turn. The cross section through the line CD, is, for this reason, called the *section of fracture*, and the horizontal line, drawn through C on its under surface, is called the *axis of fracture*. The fracture is made by tearing asunder the fibres, such as DE or FG. Let us suppose a real joint at C, and that the beam is really sawed through along CD, and that in place of its natural fibres threads are substituted all over the section of fracture. The weight now tends to break these threads; and it is our business to find the force necessary for this purpose.

Plate CCCXL.

It is evident that DCA may be considered as a bended lever, of which C is the fulcrum. If f be the force which will just balance the cohesion of a thread when hung on it so that the smallest addition will break it, we may find the weight which will be sufficient for this purpose when hung on at A, by saying, AC : CD $= f : e$, and e will be the weight which will just break the thread by hanging e by the point A. This gives us $e = f \times \frac{CD}{CA}$. If the weight be hung on at a, the force just sufficient for breaking the same thread will be $= f \frac{CD}{Ca}$. In like manner the force e, which must be hung on at A in order to break an equally strong or an

equally refilting fibre at F, muſt be $= f \times \frac{CF}{CA}$. And

ſum of all the reſt

If we ſuppoſe all the fibres to exert equal reſiſtances at the inſtant of fracture, we know, from the ſimpleſt principles of mechanics, that the reſiſtance of all the particles in the line CD, each acting equally in its own place, is the ſame as if all the ſeveral reſiſtances were united at the middle point g. Now this total reſiſtance is the reſiſtance or ſtrength f of each particle, multiplied by the number of particles. This number may be expreſſed by the line CD, becauſe we have no reaſon to ſuppoſe that they are at unequal diſtances. Therefore, in comparing different ſections together, the number of particles in each are as the ſections themſelves. Therefore DC may repreſent the number of particles in the line DC. Let us call this line the depth of the beam, and expreſs it by the ſymbol d. And ſince we are at preſent treating of roofs whoſe rafters and other parts are commonly of uniform breadth, let us call AH or BI the breadth of the beam, and expreſs it by b, and let CA be called its length, l. We may now expreſs the ſtrength of the whole line CD by $f \times d$, and we may ſuppoſe it all concentrated in the middle point g. Its mechanical energy, therefore, by which it reſiſts the energy of the weight w, applied at the diſtance l, is f. CD. Cg, while the momentum of w is w. CA. We muſt therefore have f. CD. $Cg = w$. CA, or $fd \cdot \frac{1}{2}d = w \cdot l$. and $fd : w = l : \frac{1}{2}d$, or $fd : w = 2l : d$. That is twice the length of the beam is to its depth as the abſolute ſtrength of one of its vertical planes to its relative ſtrength, or its power of reſiſting this tranſverſe fracture.

It is evident, that what has been now demonſtrated of the reſiſtance exerted in the line CD, is equally true of every line parallel to CD, in the thickneſs or breadth of the beam. The abſolute ſtrength of the whole ſection of fracture is properly repreſented by $f.d.b$, and we ſhall have $2l : d = fdb : w$; or twice the length of the beam is to its depth as the abſolute ſtrength to the relative ſtrength. Suppoſe the beam 12 feet long and one foot deep; then whatever is its abſolute ſtrength, the 24th part of this will break it if hung at its extremity.

But even this is too favourable a ſtatement; all the fibres are ſuppoſed to act alike in the inſtant of fracture. But this is not true. At the inſtant that the fibre at D breaks, it is ſtretched to the utmoſt, and is exerting its whole force. But at this inſtant the fibre at g is not ſo much ſtretched, and it is not then exerting its utmoſt force. If we ſuppoſe the extenſion of the fibres to be as their diſtance from C, and the actual exertion of each to be as their extenſions, it may eaſily be ſhown (ſee STRENGTH and STRAIN), that the whole reſiſtance is the ſame as if the full force of all the fibres were united at a point r diſtant from C by one third of CD. In this caſe we muſt ſay, that the abſolute ſtrength is to the relative ſtrength as three times the breadth to the depth: ſo that the beam is weaker than by the former ſtatement in the proportion of two to three.

Even this is more ſtrength than experiment juſtifies; and we can ſee an evident reaſon for it. When the beam is ſtrained, not only are the upper fibres ſtretched, but the lower fibres are compreſſed. This is very diſtinctly ſeen, if we attempt to break a piece of cork cut into the ſhape of a beam: this being the caſe, C is not the centre of fracture. There is ſome point c which lies between the fibres which are ſtretched and thoſe that are compreſſed. This fibre is neither ſtretched nor ſqueezed; and this point is the real centre of fracture; and the lever by which a fibre D reſiſts, is not DC, but a ſhorter one De; and the energy of the whole reſiſtances muſt be leſs than by the ſecond ſtatement. Till we know the proportion between the dilatability and compreſſibility of the parts, and the relation between the dilatations of the fibres and the reſiſtances which they exert in this ſtate of dilatation, we cannot poſitively ſay where the point c is ſituated, nor what is the ſum of the actual reſiſtances, or the point where their action may be ſuppoſed concentrated. The former woods, ſuch as oak and cheſnut, may be ſuppoſed to be but ſlightly compreſſible; we know that willow and other ſoft woods are compreſſible. Theſe laſt muſt therefore be weaker: for it is evident, that the fibres which are in a ſtate of compreſſion do not reſiſt the fracture. It it well known, that a beam of willow may be cut through from C to g without weakening it in the leaſt, if the cut be filled up by a wedge of hard wood ſtuck in.

We can only ſay, that very ſound oak and red fir have the centre of effort ſo ſituated, that the abſolute ſtrength is to the relative ſtrength in a proportion not leſs than that of three and a half times the length of the beam to its depth. A ſquare inch of ſound oak will carry about 8000 pounds. If this bar be firmly fixed in a wall, and project 12 inches, and be loaded at the extremity with 200 pounds, it will be broken. It will juſt bear 190, its relative ſtrength being $\frac{1}{43}$ of its abſolute ſtrength; and this is the caſe only with the fineſt pieces, ſo placed that their annual plates or layers are in a vertical poſition. A larger log is not ſo ſtrong tranſverſely, becauſe its plates lie in various directions round the heart.

18 Practical inference.

Theſe obſervations are enough to give us a diſtinct notion of the vaſt diminution of the ſtrength of timber when the ſtrain is acroſs it; and we ſee the juſtice of the maxim which we inculcated, that the carpenter, in framing roofs, ſhould avoid as much as poſſible the expoſing his timbers to tranſverſe ſtrains. But this cannot be avoided in all caſes. Nay the ultimate ſtrain, ariſing from the very nature of a roof, is tranſverſe. The rafters muſt carry their own weight, and this tends to break them acroſs: an oak beam a foot deep will not carry its own weight if it project more than 60 feet. Beſides this, the rafters muſt carry the lead, tyling, or ſlates. We muſt therefore conſider this tranſverſe ſtrain a little more particularly, ſo as to know what ſtrain will be laid on any part by an unavoidable load, laid on either at that part or at any other.

19 Effect when beams are ſupported at the ends and loaded in the middle, &c.

We have hitherto ſuppoſed, that the beam had one of its ends fixed in a wall, and that it was loaded at the other end. This is not the uſual arrangement, and was taken merely as affording a ſimple application of the mechanical principles. It is much more uſual to have the beam ſupported at the ends, and loaded in the middle. Let the beam FEGH (fig. 2.) reſt on the props E and G, and be loaded at its middle point C with a weight W. It is required to determine the ſtrain at the ſection CD. It is plain that the beam will receive

Roof. receive the ſame ſupport, and ſuffer the ſame ſtrain, if, inſtead of the blocks E and G, we ſubſtitute the ropes E*f e*, G*h g*, going over the pulleys *f* and *g*, and loaded with proper weights *e* and *g*. The weight *e* is equal to the ſupport given by the block E; and *g* is equal to the ſupport given by G. The ſum of *e* and *g* is equal to W; and, on whatever point W is hung, the weights *e* and *g* are to W in the proportion of DG and DE to GE. Now, in this ſtate of things, it appears that the ſtrain on the ſection CD ariſes immediately from the upward action of the ropes F*f* and H*h*, or the upward preſſions of the blocks E and G; and that the office of the weight W is to oblige the beam to oppoſe this ſtrain. Things are in the ſame ſtate in reſpect of ſtrain as if a block were ſubſtituted at D for the weight W, and the weights *e* and *g* were hung on at E and G; only the directions will be oppoſite. The beam tends to break in the ſection CD, becauſe the ropes pull it upwards at E and G, while a weight W holds it down at C. It tends to open at D, and C becomes the centre of fracture. The ſtrain therefore is the ſame as if the half ED were fixed in the wall, and a weight equal to *g*, that is, to the half of W, were hung on at G.

Hence we conclude, that a beam ſupported at both ends, but not fixed there, and loaded in the middle, will carry twice as much weight as it can carry at its extremity, when the other extremity is faſt in a wall.

The ſtrain occaſioned at any point L by a weight W, hung on at any other point D, is $= W \times \frac{DE}{EG} \times LG$. For EG is to ED as W to the preſſure occaſioned at G. This would be balanced by ſome weight *g* acting over the pulley *h*; and this tends to break the beam at L, by acting on the lever GL. The preſſure at G is $W.\frac{DE}{EG}$, and therefore the ſtrain at L is $W.\frac{DE}{EG}.LG$.

In like manner, the ſtrain occaſioned at the point D by the weight W hung on there, is $W\frac{DE}{EG} \times DG$; which is therefore equal to $\frac{1}{4}$ W, when D is the middle point.

Hence we ſee, that the general ſtrain on the beam ariſing from one weight, is proportionable to the rectangle of the parts of the beam, (for $\frac{W.DE.DG}{EG}$ is as DE.DG), and is greateſt when the load is laid on the middle of the beam.

We alſo ſee, that the ſtrain at L, by a load at D, is equal to the ſtrain at D by the ſame load at L. And the ſtrain at L, from a load at D, is to the ſtrain by the ſame load at L as DE to LE. Theſe are all very obvious corollaries; and they ſufficiently inform us concerning the ſtrains which are produced on any part of the timber by a load laid on any other part.

If we now ſuppoſe the beam to be fixed at the two ends, that is, firmly framed, or held down by blocks at I and K, placed beyond E and G, or framed into poſts, it will carry twice as much as when its ends were free. For ſuppoſe it ſawn through at CD; the weight W hung on there will be juſt ſufficient to break it at E and G. Now reſtore the connection of the ſection CD, it will require another weight W to break it there at the ſame time. Roof.

Therefore, when a rafter, or any piece of timber, is firmly connected with three fixed points G, E, I, it will bear a greater load between any two of them than if its connection with the remote point were removed; and if it be faſtened in four points, G, E, I, K, it will be twice as ſtrong in the middle part as without the two remote connections.

One is apt to expect from this that the joiſt of a floor will be much ſtrengthened; by being firmly built in the wall. It is a little ſtrengthened; but the hold which can thus be given it is much too ſhort to be of any ſenſible ſervice; and it tends greatly to ſhatter the wall, becauſe, when it is bent down by a load, it forces up the wall with the momentum of a long lever. Judicious builders therefore take care not to bind the joiſts tight in the wall. But when the joiſts of adjoining rooms lie in the ſame direction, it is a great advantage to make them of one piece. They are then twice as ſtrong as when made in two lengths.

20 Inferences.

It is eaſy to deduce from theſe premiſſes the ſtrain on any point which ariſes from the weight of the beam itſelf, or from any load which is uniformly diffuſed over the whole or any part. We may always conſider the whole of the weight which is thus uniformly diffuſed over any part as united in the middle point of that part; and if the load is not uniformly diffuſed, we may ſtill ſuppoſe it united at its centre of gravity. Thus, to know the ſtrain at L ariſing from the weight of the whole beam, we may ſuppoſe the whole weight accumulated in its middle point D. Alſo the ſtrain at L, ariſing from the weight of the part ED, is the ſame as if this weight were accumulated in the middle point *d* of ED; and it is the ſame as if half the weight of ED were hung on at D. For the real ſtrain at L is the upward preſſure at G, acting by the lever GL. Now call the weight of the part DE*e*; this upward preſſure will be $\frac{e \times d\,E}{EG}$, or $\frac{\frac{1}{2}e \times DE}{EG}$.

Therefore the ſtrain on the middle of a beam, ariſing from its own weight, or from any uniform load, is the weight of the beam or its load $\times \frac{ED}{EG} \times DG$; that is, half the weight of the beam or load multiplied or acting by the lever DG; for $\frac{ED}{EG}$ is $\frac{1}{2}$.

Alſo the ſtrain at L, ariſing from the weight of the beam, or the uniform load, is $\frac{1}{2}$ the weight of the beam or load acting by the lever LG. It is therefore proportional to LG, and is greateſt of all at D. Therefore a beam of uniform ſtrength throughout, uniformly loaded, will break in the middle.

21 Relation between the weights or ſtrains and the relative ſtrength.

It is of importance to know the relation between the ſtrains ariſing from the weights of the beams, or from any uniformly diffuſed load, and the relative ſtrength. We have already ſeen, that the relative ſtrength is $\int \frac{d\,b.d}{m\,l}$, where *m* is a number to be diſcovered by experiment for every different ſpecies of materials. Leaving out every circumſtance but what depends on the dimenſions of the beam, viz. *d*, *b*, and *l*, we ſee that the relative ſtrength is in the proportion of $\frac{d^2 b}{l}$,

Roof.

that is, as the breadth and the ſquare of the depth directly and the length inverſely.

Now, to conſider firſt the ſtrain ariſing from the weight of the beam itſelf, it is evident that this weight increaſes in the ſame proportion with the depth, the breadth, and the length of the beam. Therefore its power of reſiſting this ſtrain muſt be as its depth directly, and the ſquare of its length inverſely. To conſider this in a more popular manner, it is plain that the increaſe of breadth makes no change in the power of reſiſting the actual ſtrain, becauſe the load and the abſolute ſtrength increaſe in the ſame proportion with the breadth. But by increaſing the depth, we increaſe the reſiſting ſection in the ſame proportion, and therefore the number of reſiſting fibres and the abſolute ſtrength: but we alſo increaſe the weight in the ſame proportion. This makes a compenſation, and the relative ſtrength is yet the ſame. But by increaſing the depth, we have not only increaſed the abſolute ſtrength, but alſo its mechanical energy: For the reſiſtance to fracture is the ſame as if the full ſtrength of each fibre was exerted at the point which we called the centre of effort; and we ſhowed that the diſtance of this from the underſide of the beam was a certain portion (a half, a third, a fourth, &c.) of the whole depth of the beam. This diſtance is the arm of the lever by which the cohesion of the wood may be ſuppoſed to act. Therefore this arm of the lever, and conſequently the energy of the reſiſtance, increaſes in the proportion of the depth of the beam, and this remains uncompenſated by any increaſe of the ſtrain. On the whole, therefore, the power of the beam to ſuſtain its own weight increaſes in the proportion of its depth. But, on the other hand, the power of withſtanding a given ſtrain applied at its extremity, or to any aliquot part of its length, is diminiſhed as the length increaſes, or is inverſely as the length; and the ſtrain ariſing from the weight of the beam alſo increaſes as the length. Therefore the power of reſiſting the ſtrain actually exerted on it by the weight of the beam is inverſely as the ſquare of the length. On the whole, therefore, the power of a beam to carry its own weight, varies in the proportion of its depth directly and the ſquare of its length inverſely.

As this ſtrain is frequently a conſiderable part of the whole, it is proper to conſider it apart, and then to reckon only on what remains for the ſupport of any extraneous load.

22 Power of a beam to carry a load uniformly diffuſed over its length.

In the next place the power of a beam to carry any load which is uniformly diffuſed over its length, muſt be inverſely as the ſquare of the length: for the power of withſtanding *any* ſtrain applied to an aliquot part of the length (which is the caſe here, becauſe the load may be conceived as accumulated at its centre of gravity, the middle point of the beam) is inverſely as the length; and the *whole* ſtrain is as the length, and therefore its momentum is as the ſquare of the length. Therefore the power of a beam to carry a weight uniformly diffuſed over it, is inverſely as the ſquare of the length. *N. B.* It is here underſtood, that the uniform load is of ſome determined quantity for every foot of the length, ſo that a beam of double length carries a double load.

23 Effect when the direction of the load is oblique.

We have hitherto ſuppoſed that the forces which tend to break a beam tranſverſely, are acting in a direction perpendicular to the beam. This is always the caſe in level floors loaded in any manner; but in roofs, the action of the load tending to break the rafters is oblique, becauſe gravity always acts in vertical lines. It may alſo frequently happen, that a beam is ſtrained by a force acting obliquely. This modification of the ſtrain is eaſily diſcuſſed. Suppoſe that the external force, which is meaſured by the weight W in fig. 1. acts in the direction A *w'* inſtead of AW. Draw C *á* perpendicular to A *w*. Then the momentum of this external force is not to be meaſured by W × AC, but by W × *á* C. The ſtrain therefore by which the fibres in the ſection of fracture DC are torn aſunder, is diminiſhed in the proportion of CA to C *á*, that is, in the proportion of radius to the ſine of the angle CA*á*, which the beam makes with the direction of the external force.

To apply this to our purpoſe in the moſt familiar manner, let AB (fig. 3.) be an oblique rafter of a building, loaded with a weight W ſuſpended to any point C, and thereby occaſioning a ſtrain in ſome part D. We have already ſeen, that the immediate cauſe of the ſtrain on D is the reaction of the ſupport which is given to the point B. The rafter may at preſent be conſidered as a lever, ſupported at A, and pulled down by the line CW. This occaſions a preſſure on B, and the ſupport acts in the oppoſite direction to the action of the lever, that is, in the direction B *b*, perpendicular to BA. This tends to break the beam in every part. The preſſure exerted at B is $\frac{W \times AE}{AB}$, AE being a horizontal line. Therefore the ſtrain at D will be $\frac{W \times AE}{AB} \times BD$. Had the beam been lying horizontally, the ſtrain at D, from the weight W ſuſpended at C, would have been $\frac{W.AC}{AB} \times BD$. It is therefore diminiſhed in the proportion of AC to AE, that is, in the proportion of radius to the coſine of the elevation, or in the proportion of the ſecant of elevation to the radius.

It is evident, that this law of diminution of the ſtrain is the ſame whether the ſtrain ariſes from a load on any part of the rafter, or from the weight of the rafter itſelf, or from any load uniformly diffuſed over its length, provided only that theſe loads act in vertical lines.

24 Strength of roofs having different elevations compared.

We can now compare the ſtrength of roofs which have different elevations. Suppoſing the width of the building to be given, and that the weight of a ſquare yard of covering is alſo given. Then, becauſe the load on the rafter will increaſe in the ſame proportion with its length, the load on the ſhare-ſide BA of the roof will be to the load of a ſimilar covering on the half AF of the flat roof, of the ſame width, as AB to AF. But the tranſverſe action of any load on AB, by which it tends to break it, is to that of the ſame load on AF as AF to AB. The tranſverſe ſtrain therefore is the ſame on both, the increaſe of the load on AB being compenſated by the obliquity of its action. But the ſtrengths of beams to reſiſt equal ſtrains, applied to ſimilar points, or uniformly diffuſed over them, are inverſely as their lengths, becauſe the momentum or energy of the ſtrain is proportional to the length. There-

fore

Roof. fore the power of AB to withſtand the ſtrain to which it is really expoſed, is to the power of AF to reſiſt its ſtrain as AF to AB. If, therefore, a rafter AG of a certain ſcantling is juſt able to carry the roofing laid on it, a rafter AB of the ſame ſcantling, but more elevated, will be too weak in the proportion of AG to AB. Therefore ſteeper roofs require ſtouter rafters, in order that they may be equally able to carry a roofing of equal weight per ſquare yard. To be equally ſtrong, they muſt be made broader, or placed nearer to each other, in the proportion of their greater length, or they muſt be made deeper in the ſubduplicate proportion of their length. The following eaſy conſtruction will enable the artiſt not familiar with computation to proportion the depth of the rafter to the ſlope of the roof.

Let the horizontal line *af* (fig. 4.) be the proper depth of a beam whoſe length is half the width of the building; that is, ſuch as would make it fit for carrying the intended tiling laid on a flat roof. Draw the vertical line *fb*, and the line *ab* having the elevation of the rafter; make *ag* equal to *af*, and deſcribe the ſemicircle *bdg*; draw *ad* perpendicular to *ab*, *ad* is the required depth. The demonſtration is evident.

We have now treated in ſufficient detail what relates to the chief ſtrain on the component parts of a roof, namely, what tends to break them tranſverſely; and we have enlarged more on the ſubject than what the preſent occaſion indiſpenſably required, becauſe the propoſitions which we have demonſtrated are equally applicable to all framings of carpentry, and are even of greater moment in many caſes, particularly in the conſtruction of machines. Theſe conſiſt of levers in various forms, which are ſtrained tranſverſely; and ſimilar ſtrains frequently occur in many of the ſupporting and connecting parts. We ſhall give in the article Timber an account of the experiments which have been made by different naturaliſts, in order to aſcertain the abſolute ſtrength of ſome of the materials which are moſt generally framed together in buildings and engines. The houſe-carpenter will draw from them abſolute numbers, which he can apply to his particular purpoſes by means of the propoſitions which we have now eſtabliſhed.

23 Effect of other ſtrains, preſſures, or thruſts.

We proceed, in the next place, to conſider the other ſtrains to which the parts of roofs are expoſed, in conſequence of the ſupport which they mutually give each other, and the preſſures (or *thruſts* as they are called in the language of the houſe-carpenter) which they exert on each other, and on the walls or piers of the building.

Let a beam or piece of timber AB (fig. 5.) be ſuſpended by two lines AC, BD; or let it be ſupported by two props AE, BF, which are perfectly moveable round their remote extremities E, F, or let it reſt on the two poliſhed plains KAH, LBM. Moreover, let G be the centre of gravity of the beam, and let GN be a line through the centre of gravity perpendicular to the horizon. The beam will not be in equilibrio unleſs the vertical line GN either paſſes through P, the point in which the directions of the two lines AC, BD, or the directions of the two props AE, FD, or the perpendiculars to the two planes KAH, LBM interſect each other, or is parallel to theſe directions. For the ſupports given by the lines or props are unqueſtionably exerted in the direction of their lengths; and it is as well known in mechanics that the ſupports given by planes are exerted in a direction perpendicular to thoſe planes in the points of contact; and we know that the weight of the beam acts in the ſame manner as if it were all accumulated in its centre of gravity G, and that it acts in the direction GN perpendicular to the horizon. Moreover, when a body is in equilibrio between three forces, they are acting in one plane, and their directions are either parallel or they paſs through one point. Roof.

The ſupport given to the beam is therefore the ſame as if it were ſuſpended by two lines which are attached to the ſingle point P. We may alſo infer, that the points of ſuſpenſion C, D, the points of ſupport E, F, the points of contact A, B, and the centre of gravity G, are all in one vertical plane.

When this poſition of the beam is diſturbed by any external force, there muſt either be a motion of the points A and B round the centres of ſuſpenſion C and D, or of the props round theſe points of ſupport E and F, or a ſliding of the ends of the beam along the poliſhed planes GH and IK; and in conſequence of theſe motions the centre of gravity G will go out of its place, and the vertical line GN will no longer paſs through the point where the directions of the ſupports interſect each other. If the centre of gravity riſes by this motion, the body will have a tendency to recover its former poſition, and it will require force to keep it away from it. In this caſe the equilibrium may be ſaid to be *ſtable*, or the body to have *ſtability*. But if the centre of gravity deſcends when the body is moved from the poſition of equilibrium, it will tend to move ſtill farther; and ſo far will it be from recovering its former poſition, that it will now fall. This equilibrium may be called a *tottering equilibrium*. Theſe accidents depend on the ſituations of the points A, B, C, D, E, F; and they may be determined by conſidering the ſubject geometrically. It does not much intereſt us at preſent; it is rarely that the equilibrium of ſuſpenſion is tottering, or that of props is ſtable. It is evident, that if the beam were ſuſpended by lines from the point P, it would have ſtability, for it would ſwing like a pendulum round P, and therefore would always tend towards the poſition of equilibrium. The interſection of the lines of ſupport would ſtill be at P, and the vertical line drawn through the centre of gravity, when in any other ſituation, would be on that ſide of P towards which this centre has been moved. Therefore, by the rules of pendulous bodies, it tends to come back. This would be more remarkably the caſe if the points of ſuſpenſion C and D be on the ſame ſide of the point P with the points of attachment A and B; for in this caſe the new point of interſection of the lines of ſupport would ſhift to the oppoſite ſide, and be ſtill farther from the vertical line through the new poſition of the centre of gravity. But if the points of ſuſpenſion and of attachment are on oppoſite ſides of P, the new point of interſection may ſhift to the ſame ſide with the centre of gravity, and lie beyond the vertical line; in this caſe the equilibrium is tottering. It is eaſy to perceive, too, that if the equilibrium of ſuſpenſion from the points C and D be ſtable, the equilibrium on the props AE and BF muſt be tottering. It is not neceſſary for our preſent purpoſe to engage more particularly in this diſcuſſion.

It is plain that, with reſpect to the mere momenta of equilibrium, there is no difference in the ſupport by threads,

threads, or props, or planes, and we may ſubſtitute the one for the other. We ſhall find this rule of uncommon uſe, becauſe we eaſily conceive diſtinct notions of the ſupport of a body by ſtrings.

Obſerve farther, that if the whole figure be inverted, and ſtrings be ſubſtituted for props, and props for ſtrings, the equilibrium will ſtill obtain: for by comparing fig. 5. with fig. 6. we ſee that the vertical line paſſing through the centre of gravity will paſs through the interſection of the two ſtrings or props; and this is all the circumſtance for the equilibrium: only it muſt be obſerved in the ſubſtitution of props for threads, and of threads for props, that if it be done without inverting the whole figure, a ſtable equilibrium becomes a tottering one, and *vice verſa*.

This is a moſt uſeful propoſition, eſpecially to the unlettered artiſan, and enables him to make a practical uſe of problems which the greateſt mechanical geniuſes have found no eaſy taſk to ſolve. An inſtance will ſhow the extent and utility of it. Suppoſe it were required to make a manſard or kirb roof whoſe width is AB (fig. 7.), and conſiſting of the four equal rafters AC, CD, DF, FB. There can be no doubt but that its beſt form is that which will put all the parts in equilibrio, ſo that no ties or ſtays may be neceſſary for oppoſing the unbalanced thruſt of any part of it. Make a chain *a c d e b* (fig. 8.) of four equal pieces, looſely connected by pin-joints, round which the parts are perfectly moveable. Suſpend this from two pins *a*, *b*, fixed in a horizontal line. This chain or feſtoon will arrange itſelf in ſuch a form that its parts are in equilibrio. Then we know that if the figure be inverted, it will compoſe the frame or truſs of a kirb-roof *a γ δ ε b*, which is alſo in equilibrio, the thruſts of the pieces balancing each other in the ſame manner that the mutual pulls of the hanging feſtoon *a c d e b* did. If the proportion of the height *d f* to the width *a b* is not ſuch as pleaſes, let the pins *a*, *b* be placed nearer or more diſtant, till a proportion between the width and height is obtained which pleaſes, and then make the figure ACDEB fig. 7. ſimilar to it. It is evident that this propoſition will apply in the ſame manner to the determination of the form of an arch of a bridge; but this is not a proper place for a farther diſcuſſion.

We are now able to compute all the thruſts and other preſſures which are exerted by the parts of a roof on each other and on the walls. Let AB (fig. 9.) be a beam ſtanding anyhow obliquely, and G its centre of gravity. Let us ſuppoſe that the ends of it are ſupported in any directions AC, BD, by ſtrings, props, or planes. Let theſe directions meet in the point P of the vertical line PG paſſing through its centre of gravity. Through G draw lines G *a*, G *b* parallel to PB, PA. Then

The weight of the beam
The preſſure or thruſt at A
The preſſure at B
} are proportional to { PG, P *a*, P *b*.

For when a body is in equilibrio between three forces, theſe forces are proportional to the ſides of a triangle which have their directions.

In like manner, if A *g* be drawn parallel to P *b*, we ſhall have

Weight of the beam
Thruſt on A
Thruſt on B
} proportional to { P *g*, PA, B *g*

Or, drawing P *γ* parallel to P *a*

Weight of beam
Thruſt at A
Thruſt at B
} are proportional to { P *γ*, P *γ*, PB

It can not be diſputed that, if ſtrength alone be conſidered, the proper form of a roof is that which puts the whole in equilibrio, ſo that it would remain in that ſhape although all the joints were perfectly looſe or flexible. If it has any other ſhape, additional ties or braces are neceſſary for preſerving it, and the parts are unneceſſarily ſtrained. When this equilibrium is obtained, the rafters which compoſe the roof are all acting on each other in the direction of their lengths; and by this action, combined with their weights, they ſuſtain no ſtrain but that of compreſſion, the ſtrain of all others that they are the moſt able to reſiſt. We may conſider them as ſo many inflexible lines having their weights accumulated in their centres of gravity. But it will allow an eaſier inveſtigation of the ſubject, if we ſuppoſe the weights to be at the joints, equal to the real vertical preſſures which are exerted on theſe points. Theſe are very eaſily computed: for it is plain, that the weight of the beam AB (fig. 9.) is to the part of this weight that is ſupported at B as AB to AG. Therefore, if W repreſent the weight of the beam, the vertical preſſure at B will be $W \times \frac{AG}{AB}$, and the vertical preſſure at A will be $W \times \frac{BG}{AB}$. In like manner, the prop BF being conſidered as another beam, and *f* as its centre of gravity and *w* as its weight, a part of this weight, equal to $w \times \frac{fF}{BF}$, is ſupported at B, and the whole vertical preſſure at B is $W \times \frac{AG}{AB} + w \times \frac{fF}{BF}$. And thus we greatly ſimplify the conſideration of the mutual thruſts of roof frames. We need hardly obſerve, that although theſe preſſures by which the parts of a frame ſupport each other in oppoſition to the vertical action of gravity, are always exerted in the direction of the pieces, they may be reſolved into preſſures acting in any other direction which may engage our attention.

27 The proper form of a roof is that which puts the whole in equilibrio.

All that we propoſe to deliver on this ſubject at preſent may be included in the following propoſition.

Let ABCDE (fig. 10.) be an aſſemblage of rafters in a vertical plane, reſting on two fixed points A and E in a horizontal line, and perfectly moveable round all the joints A, B, C, D, E; and let it be ſuppoſed to be in equilibrio, and let us inveſtigate what adjuſtment of the different circumſtances of weight and inclination of its different parts is neceſſary for producing this equilibrium.

Let F, G, H, I, be the centres of gravity of the different rafters, and let theſe letters expreſs the weights of each. Then (by what has been ſaid above) the weight which preſſes B directly downwards is $F \times \frac{AF}{AB} + G \times \frac{CG}{BC}$. The weight on C is in like manner $G \times \frac{BG}{BC} + H \times \frac{DH}{CD}$, and that on D is $H \times \frac{CH}{CD} + I \times \frac{EI}{DE}$.

Let A *b c d* E be the figure ABCDE inverted, in the manner already deſcribed. It may be conceived as a thread faſtened at A and E, and loaded at *b*, *c*, and

d

Roof. d with the weights which are really preſſing on B, C, and D. It will arrange itſelf into ſuch a form that all will be in equilibrio. We may diſcover this form by means of this ſingle conſideration, that any part bc of the thread is equally ſtretched throughout in the direction of its length. Let us therefore inveſtigate the proportion between the weight β, which we ſuppoſe to be pulling the point b in the vertical direction $b\beta$ to the weight d, which is pulling down the point d in a ſimilar manner. It is evident, that ſince AE is a horizontal line, and the figures AbcdE and ABCDE equal and ſimilar, the lines Bb, Cc, Dd, are vertical. Take bf to repreſent the weight hanging at b. By ſtretching the threads bA and bc, it is ſet in oppoſition to the contractile powers of the threads, acting in the directions bA and bc, and it is in immediate equilibrio with the equivalent of theſe two contractile forces. Therefore make bg equal to bf, and make it the diagonal of a parallelogram $bbig$. It is evident that bb, bi, are the forces exerted by the threads bA, bc. Then, ſeeing that the thread bc is equally ſtretched in both directions, make ck equal to bi; ck is the contractile force which is excited at c by the weight which is hanging there. Draw kl parallel to cd, and lm parallel to bc. The force lc is the equivalent of the contractile forces ck, cm, and is therefore equal and oppoſite to the force of gravity acting at C. In like manner, make $dn = cm$, and complete the parallelogram $ndpo$, having the vertical line od for its diagonal. Then dn and dp are the contractile forces excited at d, and the weight hanging there muſt be equal to od.

Therefore, the load at b is to the load at d as bg to do. But we have ſeen that the compreſſing forces at B, C, D may be ſubſtituted for the extending forces at b, c, d. Therefore the weights at B, C, D which produce the compreſſions, are equal to the weights at b, c, d, which produce the extenſions. Therefore $bg : do =$

$$F \times \frac{AF}{AB} + G \times \frac{CG}{BC} : H \times \frac{CH}{CD} + I \times \frac{EI}{DE}.$$

Let us enquire what relation there is between this proportion of the loads upon the joints at B and D, and the angles which the rafters make at theſe joints with each other, and with the horizon or the plumb lines. Produce AB till it cut the vertical Cc in Q; draw BR parallel to CD, and BS parallel to DE. The ſimilarity of the figures ABCDE and AbcdE, and the ſimilarity of their poſition with reſpect to the horizontal and plumb lines, ſhew, without any further demonſtration, that the triangles QCB and gbi are ſimilar, and that QB : BC $= gi : ib = bb : ib$. Therefore QB is to BC as the contractile force exerted by the thread Ab to that exerted by bc; and therefore QB is to BC as the compreſſion of BA to the compreſſion on BC (A). Then, becauſe bi is equal to ck, and the triangles CBR and ckl are ſimilar, CB : BR $= ck : kl$, $= ck : cm$, and CB is to BR as the compreſſion on CB to the compreſſion on CD. And, in like manner, becauſe $cm = dn$, we have BR to BS as the compreſſion on DC to the compreſſion on DE. Alſo BR : RS $= nd : do$, that is, as the compreſſion on DC to the load on D. Finally combining all theſe ratios

QC : CB $= gb : bi, = gb : kc$
CB : BR $= kc : kl, = kc : dn$
BR : BS $= nd : no = dn : no$
BS : RS $= no : do = no : do$, we have finally
QC : RS $= gb : od =$ Load at B : Load at D.

Roof.

Now

QC : BC $= ſ$, QBC : $ſ$, BQC, $= ſ$, ABC : $ſ$, ABb
BC : BR $= ſ$, BRC : $ſ$, BCR, $= ſ$, CDd : $ſ$, bBC
BR : RS $= ſ$, BSR : $ſ$, RBS $= ſ$, dDE : $ſ$, CDE

Therefore

QC : RS $= ſ$, ABC. $ſ$, CDd. $ſ$, dDE : $ſ$, CDE. $ſ$, ABb. $ſ$, bBC.

Or

$$QC : RS = \frac{ſ, ABC}{ſ, AB b . ſ CB b} : \frac{ſ, CDE}{ſ, d DC . ſ, d DE}.$$

That is, the loads on the different joints are as the ſines of the angles at theſe joints directly, and as the products of the ſines of the angles which the rafters make with the plumb lines inverſely.

Or, the loads are as the ſines of the angles of the joints directly, and as the products of the coſines of the elevations of the rafters jointly.

Or, the loads at the joints are as the ſines of the angles at the joints, and as the products of the ſecants of elevation of the rafters jointly: for the ſecants of angles are inverſely as the coſines.

Draw the horizontal line BT. It is evident, that if this be conſidered as the radius of a circle, the lines BQ, BC, BR, BS are the ſecants of the angles which theſe lines make with the horizon. And they are alſo as the thruſts of theſe rafters to which they are parallel. Therefore, the thruſt which any rafter makes in its own direction is as the ſecant of its elevation.

The horizontal thruſt is the ſame at all the angles. For $ii = k\kappa$, $= m\mu$, $= n\nu$, $= p\pi$. Therefore both walls are equally preſſed out by the weight of the roof. We can find its quantity by comparing it with the load on one of the joints:

Thus, QC : CB $= ſ$, ABC : $ſ$, ABb
BC : BT $=$ Rad. : $ſ$, BCT, $=$ Rad. : $ſ$. CBb
Therefore, QC : BT $=$ Rad. $\times$ $ſ$, ABC : $ſ$, bBA $\times ſ$, bBC.

It deſerves remark, that the lengths of the beams do not affect either the proportion of the load at the different joints, nor the poſition of the rafters. This depends merely on the weights at the angles. If a change of length affects the weight, this indeed affects the form alſo; and this is generally the caſe. For it ſeldom happens, indeed it never ſhould happen, that the weight on rafters of longer bearing are not greater. The covering alone increaſes nearly in the proportion of the length of the rafter.

25 The length of the beams depends on the weights at the angles.

If the proportion of the weights at B, C, and D are

(A) This proportion might have been ſhown directly without any uſe of the inverted figure or conſideration of contractile forces; but this ſubſtitution gives diſtinct notions of the mode of acting even to perſons not much converſant in ſuch diſquiſitions; and we wiſh to make it familiar to the mind, becauſe it gives an eaſy ſolution of the moſt complicated problems, and furniſhes the practical carpenter, who has little ſcience, with ſolutions of the moſt difficult caſes by experiment. A feſtoon, as we called it, may eaſily be made; and we are certain, that the forms into which it will arrange itſelf are models of perfect frames.

Roof.

... of ... to the position of any two of the lines, the position of all the rest is determined.

If the horizontal distances between the angles are all equal, the forces on the different angles are proportional to the verticals drawn on the lines that join the angle from the adjoining angle, and the thrusts on the different angles are as the lines which connect them.

If the rafters themselves are of equal lengths, the weights at the different angles are as their vertical projections, or as the rise of the elevation of the rafters jointly.

This propoſition is very fruitful in its practical conſequences. It is eaſy to perceive that it contains the whole theory of the conſtruction of arches; for each ſtone of an arch may be conſidered as one of the rafters of this piece of carpentry, ſince all is kept up by its mere equilibrium. We may have an opportunity in ſome future article of exhibiting ſome very elegant and uſeful illuſtrations of the moſt difficult caſes of this important problem; and we now proceed to make uſe of the knowledge we have acquired for the conſtruction of roofs.

We mentioned by the bye a problem which is not unfrequent in practice, to determine the beſt form of a kirb-roof. Mr Couplet of the Royal Academy of Paris has given a ſolution of it in an elaborate memoir in 1726, occupying ſeveral lemmas and theorems.

Let AE (fig. 11.) be the width, and CF the height; it is required to conſtruct a roof ABCDE whoſe rafters AB, BC, CD, DE, are all equal, and which ſhall be in equilibrio.

Draw CE, and biſect it perpendicularly in H by the line DHG, cutting the horizontal line AE in G. About the centre G, with the diſtance GE, deſcribe the circle EDC. It muſt paſs through C, becauſe CH is equal to HE and the angles at H are equal. Draw HK parallel to FE, cutting the circumference in K. Draw CK, cutting GH in D. Join CD, ED; theſe lines are the rafters of half of the roof required.

We prove this by ſhowing, that the loads in the angles C and D are equal. For this is the proportion which reſults from the equality of the rafters, and the extent of ſurface of the uniform roofing which they are ſuppoſed to ſupport. Therefore produce ED till it meet the vertical FC in N; and having made the ſide CBA ſimilar to CDE, complete the parallelogram BCDP, and draw DB, which will biſect CP in R, as the horizontal line KH, biſects CF in Q. Draw KF, which is evidently parallel to DP. Make CS perpendicular to CF, and equal to FG; and about S, with the radius SF, deſcribe the circle FKW. It muſt paſs through K, becauſe SF is equal to CG, and CQ = QF. Draw WK, WS, and produce BC, cutting ND in O.

The angle WKF at the circumference is one-half of the angle WSF at the centre, and is therefore equal to WSC, or CGF. It is therefore double of the angle CEF or ECS. But ECS is equal to ECD and DCS, and ECD is one-half of NDC, and DCS is one-half of DCO, or CDP. Therefore the angle WKF is equal to NDP, and WK is parallel to ND, and CF is to CW as CP to CN; and CN is equal to CP. But it has been ſhown above, that CN and CP are as the loads upon D and C. Theſe are therefore equal, and the rafters ABCDE are in equilibrio. Roof.

A compariſon of this conſtruction with that of Mr Couplet will ſhow its great advantage in reſpect of ſimplicity and perſpicuity. And the intelligent reader can eaſily adapt the conſtruction to any proportion between the rafters AB and BC, which other circumſtances, ſuch as garret-room, &c. may render convenient. The conſtruction muſt be ſuch that NC may be to CP as CD to $\frac{CD+DE}{2}$. Whatever proportion of AB to BC is aſſumed, the point D′ will be found in the circumference of a ſemicircle H′ D′ *b*′, whoſe centre is in the line CE, and having AB : BC = CH : HE, = CK : KL.—The reſt of the conſtruction is ſimple.

In buildings which are roofed with ſlate, tyle, or ſhingles, the circumſtance which is moſt likely to limit the conſtruction is the ſlope of the upper rafters CB, CD. This muſt be ſufficient to prevent the penetration of rain, and the ſtripping by the winds. The only circumſtance left in our choice in this caſe is the proportion of the rafters AB and BC. Nothing is eaſier than making NC to CP in any defined proportion when the angle BCD is given.

31 The truſs for a roof ſhould always be in equilibrio.

We need not repeat that it is always a deſirable thing to form a truſs for a roof in ſuch a manner that it ſhall be in equilibrio. When this is done, the whole force of the ſtruts and braces which are added to it is employed in preſerving this form, and no part is expended in unneceſſary ſtrains. For we muſt now obſerve, that the equilibrium of which we have been treating is always of that kind which we called the tottering, and the roof requires ſtays, braces, or hanging timbers, to give it ſtiffneſs, or keep it in ſhape. We have alſo ſaid enough to enable any reader, acquainted with the moſt elementary geometry and mechanics, to compute the tranſverſe ſtrains and the thruſts to which the component parts of all roofs are expoſed.

32 General maxims by which all roofs muſt be conſtructed.

It only remains now to ſhew the general maxims by which all roofs muſt be conſtructed, and the circumſtances which determine their excellence. In doing this we ſhall be exceedingly brief, and almoſt content ourſelves with exhibiting the principal forms, of which the endleſs variety of roofs are only ſlight modifications.—We ſhall not trouble the reader with any account of ſuch roofs as receive part of their ſupport from the interior walls, but confine ourſelves to the more difficult problem of throwing a roof over a wide building, without any intermediate ſupport; becauſe when ſuch roofs are conſtructed in the beſt manner, that is, deriving the greateſt poſſible ſtrength from the materials employed, the beſt conſtruction of the others is neceſſarily included. For all ſuch roofs as reſt on the middle walls are roofs of ſmaller bearing. The only exception deſerving notice is the roofs of churches which have aiſles ſeparated from the nave by columns. The roof muſt riſe on theſe. But if it is of an arched form internally, the horizontal thruſts muſt be nicely balanced, that they may not puſh the columns aſide.

33 Simpleſt notion of a roof.

The ſimpleſt notion of a roof-frame is, that it conſiſts of two rafters AB and BC (fig. 12.), meeting in the ridge B.

Even this ſimple form is ſuſceptible of better and worſe

Roof. worſe. We have already ſeen, that when the weight of a ſquare yard of covering, is given, a ſteeper roof requires ſtronger rafters, and that when the ſcantling of the timbers is alſo given, the relative ſtrength of a rafter is inverſely as its length. But there is now another circumſtance to be taken into the account, viz. the ſupport which one rafter leg gives to the other. The beſt form of a rafter will therefore be that in which the relative ſtrength of the legs, and their mutual ſupport, give the greateſt product. Mr Muller in his *Military Engineer*, gives a determination of the beſt pitch of a roof, which has conſiderable ingenuity, and has been copied into many books of military education both in Britain and on the continent. Deſcribe on the width A C, fig. 13. the ſemicircle AFC, and biſect it by the radius F D. Produce the rafter A B to the circumference in E, join EC, and draw the perpendicular E G.—

34 Beſt form of rafters.

Now $AB : AD = AC : AE$, and $AE = \frac{AD \times AC}{AB}$, and AE is inverſely as AB, and may therefore repreſent its ſtrength in relation to the weight actually lying on it. Alſo the ſupport which CB gives to AB is as CE, becauſe CE is perpendicular to AB. Therefore the form which renders $AE \times EC$ a maximum ſeems to be that which has the greateſt ſtrength. But $AC : AE = EC : EG$, and $EG = \frac{AE \cdot EC}{AC}$, and is therefore proportional to AE.EC. Now EG is a maximum when B is in F, and a ſquare pitch is in this reſpect the ſtrongeſt. But it is very doubtful whether this conſtruction is deduced from juſt principles. There is another ſtrain to which the leg A B is expoſed, which is not taken into the account. This ariſes from the curvature which it unavoidably acquires by the tranſverſe preſſure of its load. In this ſtate it is preſſed in its own direction by the abutment and load of the other leg. The relation between this ſtrain and the reſiſtance of the piece is not very diſtinctly known. Euler has given a diſſertation on this ſubject (which is of great importance, becauſe it affects poſts and pillars of all kinds; and it is very well known that a poſt of ten feet long and ſix inches ſquare will bear with great ſafety a weight which would cruſh a poſt of the ſame ſcantling and 20 feet long in a minute); but his determination has not been acquieſced in by the firſt mathematicians. Now it is in relation to theſe two ſtrains that the ſtrength of the rafter ſhould be adjuſted. The firmneſs of the ſupport given by the other leg is of no conſequence, if its own ſtrength is inferior to the ſtrain. The force which tends to cruſh the leg A B, by compreſſing it in its curved ſtate, is to its weight as A B to B D, as is eaſily ſeen by the compoſition of forces; and its incurvation by this force has a relation to it, which is of intricate determination. In is contained in the properties demonſtrated by Bernoulli of the elaſtic curve. This determination alſo includes the relation between the curvature and the length of the piece. But the whole of this ſeemingly ſimple problem is of much more difficult inveſtigation than Mr Muller was aware of; and his rules for the pitch of a roof, and for the ſally of a dock gate, which depends on the ſame principles, are of no value. He is, however, the firſt author who attempted to ſolve either of theſe problems on mechanical principles ſuſceptible of preciſe reaſoning. Belidor's ſolutions, in his *Architecture Hydraulique*, are below notice.

Reaſons of economy have made carpenters prefer a low pitch; and although this does diminiſh the ſupport given by the oppoſite leg faſter than it increaſes the relative ſtrength of the other, this is not of material conſequence, becauſe the ſtrength remaining in the oppoſite leg is ſtill very great; for the ſupporting leg is acting againſt compreſſion, in which caſe it is vaſtly ſtronger than the ſupported leg acting againſt a tranſverſe ſtrain. Roof.

35 Thruſt on the walls.

But a roof of this ſimplicity will not do in moſt caſes. There is no notice taken in its conſtruction of the thruſt which it exerts on the walls. Now this is the ſtrain which is the moſt hazardous of all. Our ordinary walls, inſtead of being able to reſiſt any conſiderable ſtrain preſſing them outwards, require, in general, ſome ties to keep them on foot. When a perſon thinks of the thinneſs and height of the walls of even a ſtrong houſe, he will be ſurpriſed that they are not blown down by any ſtrong puff of wind. A wall of three feet thick, and 60 feet high, could not withſtand a wind blowing at the rate of 30 feet *per* ſecond (in which caſe it acts with a force conſiderably exceeding two pounds on every ſquare foot), if it were not ſtiffened by croſs-walls, joiſts, and roof, which all help to tie the different parts of the building together.

36 How avoided.

A carpenter is therefore exceedingly careful to avoid every horizontal thruſt, or to oppoſe them by other forces. And this introduces another eſſential part into the conſtruction of a roof, namely the *tie* or *beam* AC, (fig. 14.), laid from wall to wall, binding the feet A and C of the rafters together. This is the ſole office of the beam; and it ſhould be conſidered in no other light than as a ſtring to prevent the roof from puſhing out the walls. It is indeed uſed for carrying the ceiling of the apartments under it; and it is even made to ſupport a flooring. But, conſidered as making part of a roof, it is merely a ſtring; and the ſtrain which it withſtands tends to tear its parts aſunder. It therefore acts with its whole abſolute force, and a very ſmall ſcantling would ſuffice if we could contrive to faſten it firmly enough to the foot of the rafter. If it is of oak, we may ſafely ſubject it to a ſtrain of three tons for every ſquare inch of its ſection. And fir will ſafely bear a ſtrain of two tons for every ſquare inch. But we are obliged to give the tie-beam much larger dimenſions, that we may be able to connect it with the foot of the rafter by a mortiſe and tenon. Iron ſtraps are alſo frequently added. By attending to this office of the tie-beam, the judicious carpenter is directed to the proper form of the mortiſe and tenon and of the ſtrap. We ſhall conſider both of theſe in a proper place, after we become acquainted with the various ſtrains at the joints of a roof.

Theſe large dimenſions of the tie-beam allow us to load it with the ceilings without any riſk, and even to lay floors on it with moderation and caution. But when it has a great bearing or ſpan, it is very apt to bend downwards in the middle, or, as the workmen term it, to ſway or ſwag; and it requires a ſupport. The queſtion is, where to find this ſupport? What fixed points can we find with which to connect the middle of the tie-beam? Some ingenious carpenter thought of ſuſpending it from the ridge by a piece of timber BD (fig. 15.), called by ſome carpenters the *king-poſt*. It muſt be acknowledged that there was great ingenuity in this thought. It was alſo perfectly juſt. For the weight of the rafters BA, BC tends to make them fly

Roof. out at the foot. This is prevented by the tie-beam, and thus excites a preſſure, by which they tend to compreſs each other. Suppoſe them without weight, and that a great weight is laid on the ridge B. This can be ſupported only by the butting of the rafters in their own directions AB and CB, and the weight tends to compreſs them in the oppoſite directions, and, through their intervention, to ſtretch the tie-beam. If neither the rafters can be compreſſed, nor the tie-beam ſtretched it is plain that the triangle ABC muſt retain its ſhape, and that B becomes a fixed point, very proper to be uſed as a point of ſuſpenſion. To this point, therefore, is the tie-beam ſuſpended by means of the king-poſt. A common ſpectator, unacquainted with carpentry, views it very differently, and the tie-beam appears to him to carry the roof. The king-poſt appears a pillar reſting on the beam, whereas it is really a ſtring; and an iron-rod of one-ſixteenth of the ſize would have done juſt as well. The king-poſt is ſometimes mortiſed into the tie-beam, and pins put through the joint, which gives it more the look of a pillar with the roof reſting on it. This does well enough in many caſes. But the beſt method is to connect them by an iron ſtrap, like a ſtirrup, which is bolted at its upper ends into the king-poſt, and paſſes round the tie-beam. In this way a ſpace is commonly left between the end of the king-poſt and the upper ſide of the tie beam. Here the beam plainly appears hanging in the ſtirrup; and this method allows us to reſtore the beam to an exact level, when it has ſunk by the unavoidable compreſſion or other yielding of the parts. The holes in the ſides of the iron ſtrap are made oblong inſtead of round; and the bolt which is drawn through all is made to taper on the under ſide; ſo that driving it farther draws the tie-beam upwards. A notion of this may be formed by looking at fig. 16. which is a ſection of the poſt and beam.

It requires conſiderable attention, however, to make this ſuſpenſion of the tie-beam ſufficiently firm. The top of the king-poſt is cut into the form of the arch-ſtone of a bridge, and the heads of the rafters are firmly mortiſed into this projecting part. Theſe projections are called joggles, and are formed by working the king-poſt out of a much larger piece of timber, and cutting off the unneceſſary wood from the two ſides; and, leſt all this ſhould not be ſufficient, it is uſual in great works to add an iron-plate or ſtrap of three branches, which are bolted into the heads of the king-poſt and rafters.

The rafters, though not ſo long as the beam, ſeem to ſtand as much in need of ſomething to prevent their bending, for they carry the weight of the covering.—This cannot be done by ſuſpenſion, for we have no fixed points above them: But we have now got a very firm point of ſupport at the foot of the king-poſt.—*Braces* or *ſtruts*, ED, FD, (fig. 17.), are put under the middle of the rafters, where they are ſlightly mortiſed, and their lower ends are firmly mortiſed into joggles formed on the foot of the king-poſt. As theſe braces are very powerful in their reſiſtance to compreſſion, and the king-poſt equally ſo to reſiſt extenſion, the points E and F may be conſidered as fixed; and the rafters being thus reduced to half their former length, have now four times their former relative ſtrength.

37 Conſtruction of flat topped roofs. Roofs do not always conſiſt of two ſloping ſides meeting in a ridge. They have ſometimes a flat on the top, with two ſloping ſides. They are ſometimes formed with a double ſlope, and are called *kirb* or *manſarde roofs*. They ſometimes have a valley in the middle, and are then called M roofs. Such roofs require another piece which may be called the *truſs beam* becauſe all ſuch frames are called *truſſes*, probably from the French word *trouſſe*, becauſe ſuch roofs are like portions of plain roofs *trouſſés* or ſhortened. Roof.

A flat-topped roof is thus conſtructed. Suppoſe the three rafters AB, BC, CD (fig. 18.) of which AB and CD are equal, and BC horizontal. It is plain that they will be in equilibrio, and the roof have no tendency to go to either ſide. The tie-beam AD withſtands the horizontal thruſts of the whole frame, and the two rafters AB and CD are each preſſed in their own directions in conſequence of their butting with the middle rafter or truſs beam BC. It lies between them like the keyſtone of an arch. They lean towards it, and it reſts on them. The preſſure which the truſs-beam and its load excites on the two rafters is the very ſame as if the rafters were produced till they meet in G, and a weight were laid on theſe equal to that of BC and its load. If therefore the truſs-beam is of a ſcantling ſufficient for carrying its own load, and withſtanding the compreſſion from the two rafters, the roof will be equally ſtrong (while it keeps its ſhape) as the plain roof AGD furniſhed with king-poſt and braces. We may conceive this another way. Suppoſe a plain roof AGD, without braces to ſupport the middle B and C of the rafters. Then let a beam BC be put in between the rafters, butting upon little notches cut in the rafters. It is evident that this muſt prevent the rafters from bending downwards, becauſe the points B and C cannot deſcend, moving round the centres A and D, without ſhortening the diſtance BC between them. This cannot be without compreſſing the beam BC. It is plain that BC may be wedged in, or wedges driven in between its ends B and C and the notches in which it is lodged. Theſe wedges may be driven in till they even force out the rafters GA and GD. Whenever this happens, all the mutual preſſure of the heads of theſe rafters at G is taken away, and the parts GB and GC may be cut away, and the roof ABCD will be as ſtrong as the roof AGD furniſhed with the king-poſt and braces, becauſe the truſs-beam gives a ſupport of the ſame kind at B and C as the brace would have done.

But this roof ABCD would have no firmneſs of ſhape. Any addition of weight on one ſide would deſtroy the equilibrium at the angle, would depreſs that angle, and cauſe the oppoſite one to riſe. To give it ſtiffneſs, it muſt either have ties or braces, or ſomething partaking of the nature of both. The uſual method of framing is to make the heads of the rafters butt on the joggles of two ſide-poſts BE and CF, while the truſs-beam, or ſtrut as it is generally termed by the carpenters, is mortiſed ſquare into the inſide of the heads. The lower ends E and F of the ſide-poſts are connected with the tie-beam either by mortiſes or ſtraps.

This conſtruction gives firmneſs to the frame; for the angle B cannot deſcend in conſequence of any inequality of preſſure, without forcing the other angle C to riſe. This it cannot do, being held down by the poſt CF. And the ſame conſtruction fortifies the tie-beam, which is now ſuſpended at the points E and F from

Roof.

from the points B and C, whoſe firmneſs we have juſt now ſhown.

38 They are not ſo ſtrong as the plain roofs.

But although this roof may be made abundantly ſtrong, it is not quite ſo ſtrong as the plain roof AGD of the ſame ſcantling. The compreſſion which BC muſt ſuſtain in order to give the ſame ſupport to the rafters at B and C that was given by braces properly placed, is conſiderably greater than the compreſſion of the braces. And this ſtrain is an addition to the tranſverſe ſtrain which BC gets from its own load. Alſo this form neceſſarily expoſes the tie beam to croſs ſtrains. If BE is mortiſed into the tie-beam, then the ſtrain which tends to depreſs the angle ABC preſſes on the tie-beam at E tranſverſely, while a contrary ſtrain acts on F, pulling it upwards. Theſe ſtrains however are ſmall; and this conſtruction is frequently uſed, being ſuſceptible of ſufficient ſtrength, without much increaſe of the dimenſions of the timbers; and it has the great advantage of giving free room in the garrets. Were it not for this, there is a much more perfect form repreſented in fig. 19. Here the two poſts BE, CF are united below. All tranſverſe action on the tie-beam is now entirely removed. We are almoſt diſpoſed to ſay that this is the ſtrongeſt roof of the ſame width and ſlope: for if the iron ſtrap which connects the pieces BE, CF with the tie-beam have a large bolt G through it, confining it to one point of the beam, there are five points A, B, C, D, G, which cannot change their places, and there is no tranſverſe ſtrain in any of the connections.

When the dimenſions of the building are very great, ſo that the pieces AB, BC, CD, would be thought too weak for withſtanding the croſs ſtrains, braces may be added as is expreſſed in fig. 18. by the dotted lines. The reader will obſerve that it is not meant to leave the top flat externally: it muſt be raiſed a little in the middle to ſhoot off the rain. But this muſt not be done by incurvating the beam BC. This would ſoon be cruſhed, and ſpring upwards. The ſlopes muſt be given by pieces of timber added above the ſtrutting beam.

39 Members of which the frame of a roof conſiſts,

And thus we have completed a frame of a roof. It conſiſts of theſe principal members: The rafters, which are immediately loaded with the covering; the tie-beam which withſtands the horizontal thruſt by which the roof tends to fly out below and puſh out the walls; the king-poſts, which hang from fixed points and ſerve to uphold the tie-beam, and alſo to afford other fixed points on which we may reſt the braces which ſupport the middle of the rafters; and laſtly the truſs or ſtrutting-beam, which ſerves to give mutual abutment to the different parts which are at a diſtance from each other. The rafters, braces, and truſſes are expoſed to compreſſion, and muſt therefore have not only coheſion but ſtiffneſs. For if they bend, the prodigious compreſſions to which they are ſubjected would quickly cruſh them in this bended ſtate. The tie-beams and king-poſts, if performing no other office but ſupporting the roof, do not require ſtiffneſs, and their places might be ſupplied by ropes, or by rods of iron of one-tenth part of the ſection that even the ſmalleſt oak ſtretcher requires. Theſe members require no greater dimenſions than what is neceſſary for giving ſufficient joints, and any more is a needleſs expence and load. All roofs, however complicated, conſiſt of theſe eſſential parts, and if pieces of timber are to be ſeen which perform none of theſe offices, they muſt be pronounced uſeleſs, and they are frequently hurtful, by producing croſs ſtrains in ſome other piece. In a roof properly conſtructed there ſhould be no ſuch ſtrains. All the timbers, except thoſe which immediately carry the covering, ſhould be either puſhed or drawn in the direction of their length. And this is the rule by which a roof ſhould always be examined.

Roof.

40 Are ſuſceptible of numberleſs combinations and varieties.

Theſe eſſential parts are ſuſceptible of numberleſs combinations and varieties. But it is a prudent maxim to make the conſtruction as ſimple, and conſiſting of as few parts, as poſſible. We are leſs expoſed to the imperfections of workmanſhip, ſuch as looſe joints, &c. Another eſſential harm ariſes from many pieces, by the compreſſion and the ſhrinking of the timber in the croſs direction of the fibres. The effect of this is equivalent to the ſhortening of the piece which butts on the joint. This alters the proportions of the ſides of the triangle on which the ſhape of the whole depends. Now in a roof ſuch as fig. 18. there is twice as much of this as in the plain pent roof, becauſe there are two poſts. And when the direction of the butting pieces is very oblique to the action of the load, a ſmall ſhrinking permits a great change of ſhape. Thus in a roof of what is called pediment pitch, where the rafters make an angle of 30 degrees with the horizon, half an inch compreſſion of the king-poſt will produce a ſagging of an inch, and occaſion a great ſtrain on the tie-beam if the poſts are mortiſed into it. In fig. 2. of the roofs in the article ARCHITECTURE, half an inch ſhrinking of each of the two poſts will allow the middle to ſagg above five inches. Fig. 1. of the ſame plate is faulty in this reſpect, by cutting the ſtrutting-beam in the middle. The ſtrutting-beam is thus ſhortened by three ſhrinkings, while there is but one to ſhorten the rafters. The conſequence is, that the truſs which is included within the rafters will ſagg away from them, and then they muſt bend in the middle till they again reſt on this included truſs. This roof is, however conſtructed on the whole on good principles, and we adduce it only to ſhow the advantages of ſimplicity. This cutting of the truſſing-beam is unavoidable, if we would preſerve the king-poſt. But we are in doubt whether the ſervice performed by it in this caſe will balance the inconvenience. It is employed only to ſupport the middle of the upper half of each rafter, which it does but imperfectly, becauſe the braces and ſtrut muſt be cut half through at their croſſing: if theſe joints are made tight, as a workman would wiſh to do, the ſettling of the roof will cauſe them to work on each other croſſwiſe with inſuperable force, and will undoubtedly ſtrain them exceedingly.

Plate XLVIII.

This method of including a truſs within the rafters of a pent roof is a very conſiderable addition to the art of carpentry. But to inſure its full effect, it ſhould always be executed in the manner repreſented in fig. 1. Plate XLVIII. with butting rafters under the principal ones, butting on joggles in the heads of the poſts. Without this the ſtrut-beam is hardly of any ſervice. We would therefore recommend fig. 20. as a proper conſtruction of a truſſed roof, and the king-poſt which is placed in it may be employed to ſupport the upper part of the rafters, and alſo for preventing the ſtrut-beam from bending in either direction in conſequence of its great compreſſion. It will alſo give a ſuſpenſion for the great burdens which are ſometimes neceſſary in

Plate CCCCXL.

a tie-beam. The former have no other firm points to which it can be attached than the portion of the ſingle rafters which carry the king-poſt are but ſhort, and therefore may be conſiderably loaded with ſafety.

We obſerve in the drawings which we ſometimes have of Chineſe buildings, that the truſſing of roofs is underſtood by them. Indeed they muſt be very experienced carpenters. We ſee wooden buildings run up to a great height, which can be ſupported only by ſuch truſſing. One of theſe is ſketched in fig. 21. There are ſome very excellent ſpecimens to be ſeen in the buildings at Deptford, belonging to the victualling-office, uſually called the *Red Houſe*, which were erected about the year 1788, and we believe are the performance of Mr James Arrow of the Board of Works, one of the moſt intelligent artiſts in Britain.

21 Remarks addreſſed to practical carpenters.

Thus have we given an elementary, but a rational or ſcientific, account of this important part of the art of carpentry. It is ſuch, that any practitioner, with the trouble of a little reflection, may always proceed with confidence, and without reſting any part of his practice on the vague notions which habit may have given him of the ſtrength and ſupports of timbers, and of their manner of acting. That theſe frequently miſlead, is proved by the mutual criticiſms which are frequently publiſhed by the rivals in the profeſſion. They have frequently ſagacity enough (for it can ſeldom be called ſcience) to point out glaring blunders; and any perſon who will look at ſome of the performances of Mr Price, Mr Wyatt, Mr Arrow, and others of acknowledged reputation, will readily ſee them diſtinguiſhable from the works of inferior artiſts by ſimplicity alone. A man without principles is apt to conſider an intricate conſtruction as ingenious and effectual; and ſuch roofs ſometimes fail merely by being ingeniouſly loaded with timber, but more frequently ſtill by the wrong action of ſome uſeleſs piece, which produces ſtrains that are tranſverſe to other pieces, or which, by rendering ſome points too firm, cauſe them to be deſerted by the reſt in the general ſubſiding of the whole. Inſtances of this kind are pointed out by Price in his Britiſh Carpenter. Nothing ſhows the ſkill of a carpenter more than the diſtinctneſs with which he can foreſee the changes of ſhape which muſt take place in a ſhort time in every roof. A knowledge of this will often correct a conſtruction which the mere mathematician thinks unexceptionable, becauſe he does not reckon on the actual compreſſion which muſt obtain, and imagines that his triangles, which ſuſtain no croſs ſtrains, invariably retain their ſhape till the pieces break. The ſagacity of the experienced carpenter is not, however, enough without ſcientific perceiving the art. But when he knows how much a particular piece will yield to compreſſion in one caſe, ſcience will tell him, and nothing but ſcience can do it, what will be the compreſſion of the ſame piece in another very different caſe. Thus he learns how far it will now yield, and then he proportions the parts ſo to each other, that when all have yielded according to their ſtrains, the whole is of the ſhape he wiſhed to produce, and every joint is in a ſtate of firmneſs. It is here that we obſerve the greateſt number of impropriettes. The iron ſtraps are frequently in poſitions not ſuited to the actual ſtrain on them, and they are in a ſtate of violent twiſt, which both tends ſtrongly to break the ſtrap, and to cripple the pieces which they ſurround.

In like manner, we frequently ſee joints or mortiſes in a ſtate of violent ſtrain or the tenons, or on the heels and ſhoulders. The joints were perhaps properly ſhaped to the primitive form of the truſs; but by its ſettling, the bearing or the puſh is changed: the brace, for example, in a very low pitched roof, comes to preſs with the upper part of the ſhoulder, and, acting as a powerful lever on the tenon, breaks it. In like manner, the lower end of the brace, which at firſt butted firmly and ſquarely on the joggle of the king-poſt, now preſſes with one corner with prodigious force, and ſeldom fails to ſplinter off on that ſide. We cannot help recommending a maxim of Mr Perronet the celebrated hydraulic architect of France, as a golden rule, viz. to make all the ſhoulders of butting pieces in the form of an arch of a circle, having the oppoſite end of the piece for its centre. Thus, in fig. 18. if the joggle-joint B be of this form, having A for its centre, the ſagging of the roof will make no partial bearing at the joint; for in the ſagging of the roof, the piece AB turns or bends round the centre A, and the counter-preſſure of the joggle is ſtill directed to A, as it ought to be. We have juſt now ſaid *bends* round A. This is too frequently the caſe, and it is always very difficult to give the tenon and mortiſe in this place a true and invariable bearing. The rafter puſhes in the direction BA, and the beam reſiſts in the direction AD. The abutment ſhould be perpendicular to neither of theſe but in an intermediate direction, and it ought alſo to be of a curved ſhape. But the carpenters perhaps think that this would weaken the beam too much to give it this ſhape in the ſhoulder; they do not even aim at it in the heel of the tenon. The ſhoulder is commonly even with the ſurface of the beam. When the bearing therefore is on this ſhoulder, it cauſes the foot of the rafter to ſlide along the beam till the heel of the tenon bears againſt the outer end of the mortiſe (See Price's *Britiſh Carpenter*, Plate C. fig. I K). This abutment is perpendicular to the beam in Price's book, but it is more generally pointed a little outwards below, to make it more ſecure againſt ſtarting. The conſequence of this conſtruction is, that when the roof ſettles, the ſhoulder comes to bear at the inner end of the mortiſe, and it riſes at the outer, and the tenon taking hold of the wood beyond it, either tears it out or is itſelf broken. This joint therefore is ſeldom truſted to the ſtrength of the mortiſe and tenon, and is uſually ſecured by an iron ſtrap, which lies obliquely to the beam, to which it is bolted by a large bolt quite through, and then embraces the outſide of the rafter foot. Very frequently this ſtrap is not made ſufficiently oblique, and we have ſeen ſome made almoſt ſquare with the beam. When this is the caſe, it not only keeps the foot of the rafter from flying out, but it binds it down. In this caſe, the rafter acts as a powerful lever, whoſe fulcrum is the inner angle of the ſhoulder, and then the ſtrap never fails to cripple the rafter at the point. All this can be prevented only by making the ſtrap very long and very oblique, and by making its outer end (the ſtirrup part) ſquare with its length, and making a notch in the rafter foot to receive it. It cannot now cripple the rafter, for it will riſe along with it, turning round the

Roof. the bolt at its inner end. We have been thus particular on this joint, becauſe it is here that the ultimate ſtrain of the whole roof is exerted, and its ſituation will not allow the excavation neceſſary for making it a good mortiſe and tenon.

Similar attention muſt be paid to ſome other ſtraps, ſuch as thoſe which embrace the middle of the rafter, and connect it with the poſt or truſs below it. We muſt attend to the change of ſhape produced by the ſagging of the roof, and place the ſtrap in ſuch a manner as to yield to it by turning round its bolt, but ſo as not to become looſe, and far leſs to make a fulcrum for any thing acting as a lever. The ſtrains ariſing from ſuch actions, in framings of carpentry which change their ſhape by ſagging, are enormous, and nothing can reſiſt them.

42 Mode of calculating ſtrains or thruſts, We ſhall cloſe this part of the ſubject with a ſimple method, by which any carpenter, without mathematical ſcience, may calculate with ſufficient preciſion the ſtrains or thruſts which are produced on any point of his work, whatever be the obliquity of the pieces.

Let it be required to find the horizontal thruſt acting on the tie-beam AD of fig. 18. This will be the ſame as if the weight of the whole roof were laid at G on the two rafters GA and GD. Draw the vertical line GH. Then, having calculated the weight of the whole roof that is ſupported by this ſingle frame ABCD, including the weight of the pieces AB, BC, CD, BE, CF themſelves, take the number of pounds, tons, &c. which expreſſes it from any ſcale of equal parts, and ſet it from G to H. Draw HK, HL parallel to GD, GA, and draw the line KL, which will be horizontal when the two ſides of the roof have the ſame ſlope. Then ML meaſured on the ſame ſcale will give the horizontal thruſt, by which the ſtrength of the tie-beam is to be regulated. GL will give the thruſt which tends to cruſh the rafters, and LM will alſo give the force which tends to cruſh the ſtrut-beam BC.

In like manner, to find the ſtrain on the king-poſt BD of fig. 17. conſider that each brace is preſſed by half the weight of the roofing laid on BA or BC, and this preſſure, or at leaſt its hurtful effect, is diminiſhed in the proportion of BA to DA, becauſe the action of gravity is vertical, and the effect which we want to counteract by the braces is in a direction *Ee* perpendicular to BA or BC. But as this is to be reſiſted by the brace *f*E acting in the direction *f*E, we muſt draw *fe* perpendicular to *Ee*, and ſuppoſe the ſtrain augmented in the proportion of E*e* to E*f*.

Having thus obtained in tons, pounds, or other meaſures, the ſtrains which muſt be balanced at *f* by the coheſion of the king-poſt, take this meaſure from the ſcale of equal parts, and ſet it off in the directions of the braces to G and H, and complete the parallelogram G*f*HK; and *f*K meaſured on the ſame ſcale will be the ſtrain on the king-poſt.

43 And the ſtrength of the truſs. The artiſt may then examine the ſtrength of his truſs upon this principle, that every ſquare inch of oak will bear at an average 7000 pounds compreſſion or ſtretching it, and may be ſafely loaded with 3500 for any length of time; and that a ſquare inch of fir will in like manner ſecurely bear 2500. And, becauſe ſtraps are uſed to reſiſt ſome of theſe ſtrains, a ſquare inch of well wrought tough iron may be ſafely ſtrained by 50,000 pounds. But the artiſt will always recollect, that we cannot have the ſame confidence in iron as in timber. The faults of this laſt are much more eaſily perceived; and when timber is too weak, it gives us warning of its failure, by yielding ſenſibly before it breaks. This is not the caſe with iron; and much of its ſervice depends on the honeſty of the blackſmith. Roof.

44 Sketch of ſome truſſed roofs, &c. In this way may any deſign of a roof be examined. We ſhall here give the reader a ſketch of two or three truſſed roofs, which have been executed in the chief varieties of circumſtances which occur in common practice.

Fig. 22. is the roof of St Paul's Church, Covent Garden, London, the work of Inigo Jones. Its conſtruction is ſingular. The roof extends to a conſiderable diſtance beyond the building, and the ends of the tie-beams ſupport the Tuſcan corniche, appearing like the mutules of the Doric order. Such a roof could not reſt on the tie-beam. Inigo Jones has therefore ſupported it by a truſs below it; and the height has allowed him to make this extremely ſtrong with very little timber. It is accounted the higheſt roof of its width in London. But this was not difficult, by reaſon of the great height which its extreme width allowed him to employ without hurting the beauty of it by too high a pitch. The ſupports, however, are diſpoſed with judgment.

Fig. 23. is a kirb or manſaid roof by Price, and ſuppoſed to be of large dimenſions, having braces to carry the middle of the rafters.

It will ſerve exceedingly well for a church having pillars. The middle part of the tie-beam being taken away, the ſtrains are very well balanced, ſo that there is no riſk of its puſhing aſide the pillars on which it reſts.

Fig. 24. is the celebrated roof of the theatre of the univerſity of Oxford, by Sir Chriſtopher Wren. The ſpan between the walls is 75 feet. This is accounted a very ingenious, and is a ſingular performance. The middle part of it is almoſt unchangeable in its form; but from this circumſtance it does not diſtribute the horizontal thruſt with the ſame regularity as the uſual conſtruction. The horizontal thruſt on the tie-beam is about twice the weight of the roof, and is withſtood by an iron ſtrap below the beam, which ſtretches the whole width of the building in the form of a rope, making part of the ornament of the ceiling.

45 Caſes in which the thruſt cannot be diſcharged from the walls by the tie-beam. In all the roofs which we have conſidered hitherto the thruſt is diſcharged entirely from the walls by the tie-beam. But this cannot always be done. We frequently want great elevation within, and arched ceilings. In ſuch caſes, it is a much more difficult matter to keep the walls free of all preſſure outwards, and there are few buildings where it is completely done. Yet this is the greateſt fault of a roof. We ſhall juſt point out the methods which may be moſt ſucceſsfully adopted.

We have ſaid that a tie-beam juſt performs the office of a ſtring. We have ſaid the ſame of the king-poſt. Now ſuppoſe two rafters AB, BC (fig. 25.) moveable about the joint B, and reſting on the top of the walls. If the line BD be ſuſpended from B, and the two lines DA, DC be faſtened to the feet of the rafters, and if theſe lines be incapable of extenſion, it is plain that all thruſt is removed from the walls as effectually

Roof. festually as by a common tie-beam. And by ſhortening BD to B*d*, we gain a greater inſide height, and more room for an arched ceiling. Now if we ſubſtitute a king-post BD (fig. 26.) and two ſtretchers or hammer-beams DA, DC for the other ſtrings, and connect them firmly by means of iron ſtraps, we obtain our purpoſe.

Roof.

Let us compare this roof with a tie-beam roof in point of ſtrength. Recur to fig. 25. and complete the parallelogram ABCF, and draw the diagonals AC, BF croſſing in E. Draw BG perpendicular to CD. We have ſeen that the weight of the roof (which we may call W) is to the horizontal thruſt at C as BF to EC; and if we expreſs this thruſt by T, we have $T = \frac{W \times EC}{BF}$. We may at preſent conſider BC as a lever moveable round the joint B, and pulled at C in the direction EC by the horizontal thruſt, and held back by the ſtring pulling in the direction CD. Suppoſe that the forces in the directions EC and CD are in equilibrio, and let us find the force S by which the ſtring CD is ſtrained. Theſe forces muſt (by the property of the lever) be inverſely as the perpendiculars drawn from the centre of motion on the lines of their direction. Therefore BG : BE = T : S, and $S = T \times \frac{BE}{BG} = W \times \frac{BE.EC}{BF.BG}$.

Therefore the ſtrain upon each of the ties DA and DC is always greater than the horizontal thruſt or the ſtrain on a ſimple tie-beam. This would be no great inconvenience, becauſe the ſmalleſt dimenſions that we could give to theſe ties, ſo as to procure ſufficient fixtures to the adjoining pieces, are always ſufficient to withſtand this ſtrain. But although the ſame may be ſaid of the iron ſtraps which make the ultimate connections, there is always ſome hazard of imperfect work, cracks or flaws, which are not perceived. We can judge with tolerable certainty of the ſoundneſs of a piece of timber, but cannot ſay ſo much of a piece of iron. Moreover, there is a prodigious ſtrain excited on the king-poſt, when BG is very ſhort in compariſon of BE, namely, the force compounded of the two ſtrains S and S on the ties DA and DC.

But there is another defect from which the ſtraight tie-beam is entirely free. All roofs ſettle a little.—When this roof ſettles, and the points B and D deſcend, the legs BA, BC muſt ſpread further out, and thus a preſſure outwards is excited on the walls. It is ſeldom therefore that this kind of roof can be executed in this ſimple form, and other contrivances are neceſſary for counteracting this ſupervening action on the walls. Fig. 27. is one of the beſt which we have ſeen, and is executed with great ſucceſs in the circus or equeſtrian theatre in Edinburgh, the width being 60 feet. The pieces EF and ED help to take off ſome of the weight, and by their greater uprightneſs they exert a ſmaller thruſt on the walls. The beam D*d* is alſo a ſort of truſs beam, having ſomething of the ſame effect. Mr Price has given another very judicious one of this kind, Britiſh Carpenter, Plate IK, fig. C, from which the tie-beam may be taken away, and there will remain very little thruſt on the walls. Thoſe which he has given in the following Plate K are, in our opinion, very faulty. The whole ſtrain in theſe laſt roofs tends to break the rafters and ties tranſverſely, and the fixtures of the ties are alſo not well calculated to reſiſt the ſtrain to which the pieces are expoſed. We hardly think that theſe roofs could be executed.

46 General obſervations.

It is ſcarcely neceſſary to remind the reader, that in all that we have delivered on this ſubject, we have attended only to the conſtruction of the principal rafters or truſſes. In ſmall buildings all the rafters are of one kind; but in great buildings the whole weight of the covering is made to reſt on a few principal rafters, which are connected by beams placed horizontally, and either mortiſed into them or ſcarfed on them. Theſe are called *purlins*. Small rafters are laid from purlin to purlin; and on theſe the laths for tiles, or the ſkirting-boards for ſlates, are nailed. Thus the covering does not immediately reſt on the principal frames. This allows ſome more liberty in their conſtruction, becauſe the garrets can be ſo divided that the principal rafters ſhall be in the partitions and the reſt left unincumbered. This conſtruction is ſo far analogous to that of floors which are conſtructed with girders, binding, and bridging joiſts.

It may appear preſuming in us to queſtion the propriety of this practice. There are ſituations in which it is unavoidable, as in the roofs of churches, which can be allowed to reſt on ſome pillars. In other ſituations, where partition-walls intervene at a diſtance not too great for a ſtout purlin, no principal rafters are neceſſary, and the whole may be roofed with ſhort rafters of very ſlender ſcantling. But in a great uniform roof, which has no intermediate ſupports, it requires at leaſt ſome reaſons for preferring this method of carcaſe-roofing to the ſimpler method of making all the rafters alike. The method of carcaſe-roofing requires the ſelection of the greateſt logs of timber, which are ſeldom of equal ſtrength and ſoundneſs with thinner rafters. In theſe the outſide planks can be taken off, and the beſt part alone worked up. It alſo expoſes to all the defects of workmanſhip in the mortiſing of purlins, and the weakening of the rafters by this very mortiſing; and it brings an additional load of purlins and ſhort rafters. A roof thus conſtructed may ſurely be compared with a floor of ſimilar conſtruction. Here there is not a ſhadow of doubt, that if the girders were ſawed into planks, and theſe planks laid as joiſts ſufficiently near for carrying the flooring boards, they will have the ſame ſtrength as before, except ſo much as is taken out of the timber by the ſaw. This will not amount to one-tenth part of the timber in the binding, bridging, and ceiling joiſts which are an additional load; and all the mortiſes and other joinings are ſo many diminutions of the ſtrength of the girders; and as no part of a carpenter's work requires more ſkill and accuracy of execution, we are expoſed to many chances of imperfection. But, not to reſt on theſe conſiderations, however reaſonable they may appear, we ſhall relate an experiment made by one on whoſe judgment and exactneſs we can depend.

47 Confirmed by experiment.

Two models of floors were made 18 inches ſquare of the fineſt uniform deal, which had been long ſeaſoned. The one conſiſted of ſimple joiſts, and the other was framed with girders, binding, bridging, and ceiling joiſts. The plain joiſts of the one contained the ſame quantity of timber with the girders alone of the other, and both were made by a moſt accurate workman. They were placed in wooden trunks 18 inches ſquare within,

Roof. within, and reſted on a ſtrong projection on the inſide. Small ſhot was gradually poured in upon the floors, ſo as to ſpread uniformly over them. The plain joiſted floor broke down with 487 pounds, and the carcaſe floor with 327. The firſt broke without giving any warning; the other gave a violent crack when 294 pounds had been poured in.

A trial had been made before, and the loads were 341 and 482. But the models having been made by a leſs accurate hand, it was not thought a fair ſpecimen of the ſtrength which might be given to a carcaſe floor.

The only argument of weight which we can recollect in favour of the compound conſtruction of roofs is, that the plain method would prodigiouſly increaſe the quantity of work; would admit nothing but long timber, which would greatly add to the expence; and would make the garrets a mere thicket of planks. We admit this in its full force; but we continue to be of the opinion that plain roofs are greatly ſuperior in point of ſtrength, and therefore ſhould be adopted in caſes where the great difficulty is to inſure this neceſſary circumſtance.

48 Of the roofs put on round buildings.

It would appear very neglectful to omit an account of the roofs put on round buildings, ſuch as domes, cupolas and the like. They appear to be the moſt difficult taſks in the carpenter art. But the difficulty lies entirely in the mode of framing, or what the French call the *trait de charpenterie*. The view which we are taking of the ſubject, as a part of mechanical ſcience, has little connection with this. It is plain, that whatever form of a truſs is excellent in a ſquare building muſt be equally ſo as one of the frames of a round one; and the only difficulty is how to manage their mutual interſections at the top. Some of them muſt be diſcontinued before they reach that length, and common ſenſe will teach us to cut them ſhort alternately, and always leave as many, that they may ſtand equally thick as at their firſt ſpringing from the baſe of the dome. Thus the length of the purlins which reach from truſs to truſs will never be too great.

The truth is, that a round building which gathers in at top, like a glaſs-houſe, a potter's kiln, or a ſpire ſteeple, inſtead of being the moſt difficult to erect with ſtability, is of all others the eaſieſt. Nothing can ſhow this more forcibly than daily practice, where they are run up without centres and without ſcaffoldings; and it requires groſs blunders indeed in the choice of their outline to put them in much danger of falling from a want of equilibrium. In like manner, a dome of carpentry can hardly fall, give it what ſhape or what conſtruction you will. It *cannot* fall unleſs ſome part of it flies out at the bottom: an iron hoop round it, or ſtraps at the joinings of the truſſes and purlins, which make an equivalent to a hoop, will effectually ſecure it. And as beauty requires that a dome ſhall ſpring almoſt perpendicularly from the wall, it is evident that there is hardly any thruſt to force out the walls. The only part where this is to be guarded againſt is, where the tangent is inclined about 40 or 50 degrees to the horizon. Here it will be proper to make a courſe of firm horizontal joinings.

We doubt not but that domes of carpentry will now be raiſed of great extent. The Halle du Bled at Paris of 200 feet in diameter, was the invention of an intelligent carpenter, the Sieur Moulineau. He was not by any means a man of ſcience, but had much more mechanical knowledge than artiſans uſually have, and was convinced that a very thin ſhell of timber might not only be ſo ſhaped as to be nearly in equilibrio, but that if hooped or firmly connected horizontally, it would have all the ſtiffneſs that was neceſſary; and he preſented his project to the magiſtracy of Paris. The grandeur of it pleaſed them, but they doubted of its poſſibility. Being a great public work, they prevailed on the Academy of Sciences to conſider it. The members, who were competent judges, were inſtantly ſtruck with the juſtneſs of Mr Moulineau's principles, and aſtoniſhed that a thing ſo plain had not been long familiar to every houſe-carpenter. It quickly became an univerſal topic of converſation, diſpute, and cabal, in the polite circles of Paris. But the Academy having given a very favourable report of their opinion, the project was immediately carried into execution, and ſoon completed, and now ſtands as one of the great exhibitions of Paris. Roof

The conſtruction of this dome is the ſimpleſt thing that can be imagined. The circular ribs which compoſe it conſiſt of planks nine feet long, 13 inches broad, and three inches thick; and each rib conſiſts of three of theſe planks bolted together in ſuch a manner that two joints meet. A rib is begun, for inſtance, with a plank of three feet long ſtanding between one of ſix feet and another of nine, and this is continued to the head of it. No machinery was neceſſary for carrying up ſuch ſmall pieces, and the whole went up like a piece of bricklayer's work. At various diſtances theſe ribs were connected horizontally by purlins and iron ſtraps, which made ſo many hoops to the whole. When the work had reached ſuch a height, that the diſtance of the ribs was two-thirds of the original diſtance, every third rib was diſcontinued, and the ſpace was left open and glazed. When carried ſo much higher that the diſtance of the ribs is one-third of the original diſtance, every ſecond rib (now conſiſting of two ribs very near each other) is in like manner diſcontinued, and the void is glazed. A little above this the heads of the ribs are framed into a circular ring of timber, which forms a wide opening in the middle; over which is a glazed canopy or umbrella, with an opening between it and the dome for allowing the heated air to get out. All who have ſeen this dome ſay, that it is the moſt beautiful and magnificent object they have ever beheld.

The only difficulty which occurs in the conſtruction of wooden domes is, when they are unequally loaded, by carrying a heavy lanthern or cupola in the middle. In ſuch a caſe, if the dome were a mere ſhell, it would be cruſhed in at the trop, or the action of the wind on the lanthern might tear it out of its place. Such a dome muſt therefore conſiſt of truſſed frames. Mr Price has given a very good one in his plate OP, tho' much ſtronger in the truſſes than there was any occaſion for. This cauſes a great loſs of room, and throws the lights of the lanthern too far up. It is evidently copied from Sir Chriſtopher Wren's dome of St Paul's church in London; a model of propriety in its particular ſituation, but by no means a general model of a wooden dome. It reſts on the brick cone within it; and Sir Chriſtopher has very ingeniouſly made uſe of it for ſtiffening this cone, as any intelligent

perſon

Roof. perſon will perceive by attending to its conſtruction (See Plate, Plate CC).

Fig. 29. repreſents a dome executed in the Regiſter Office in Edinburgh, by James and Robert Adams, and is very agreeable to mechanical principles. The ſpan is 50 feet clear, and the thickneſs is only 4½.

Roof of Norman ſtructures.

We cannot take leave of the ſubject without taking ſome notice of what we have already ſpoken of with commendation by the name of *Norman roofs*. We called them *Norman*, becauſe they were frequently executed by that people ſoon after their eſtabliſhment in Italy and other parts of the ſouth of Europe, and became the prevailing taſte in all the great baronial caſtles. Their architect were rivals to the Saracens and Moors, who about that time built many Chriſtian churches; and the architecture which we now call Gothic ſeems to have ariſen from their joint labours.

The principle of a Norman roof is extremely ſimple. The rafters all butted on joggled king-poſts AF, BG, CH, &c. (fig. 29.), and braces or ties were then diſpoſed in the intervals. In the middle of the roof HB and HD are evidently ties in a ſtate of extenſion, while the poſt CH is compreſſed by them. Towards the walls on each ſide, as between B and F, and between F and L, they are braces, and are compreſſed. The ends of the poſts were generally ornamented with knots of flowers, emboſſed globes, and the like, and the whole texture of the truſs was exhibited and dreſſed out.

This conſtruction admits of employing very ſhort timbers; and this very circumſtance gives greater ſtrength to the truſs, becauſe the angle which the brace or tie makes with the rafter is more open. We may alſo perceive that all thruſt may be taken off the walls. If the pieces AF, BF, LF, be removed, all the remaining diagonal pieces act as ties, and the pieces directed to the centre act as ſtruts; and it may alſo be obſerved, that the principle will apply equally to a ſtraight or flat roof or to a floor. A floor ſuch as *a b c*, having the joint in two pieces *a b*, *b c*, with a ſtrut *b d*, and two ties, will require a much greater weight to break it than if it had a continued joint *a c* of the ſame ſcantling. And, laſtly, a piece of timber acting as a tie is much ſtronger than the ſame piece acting as a ſtrut; for in the latter ſituation it is expoſed to bending, and when bent it is much leſs able to withſtand a very great ſtrain. It muſt be acknowledged, however, that this advantage is balanced by the great inferiority of the joints in point of ſtrength. The joint of a tie depends wholly on the pins; for this reaſon ties are never uſed in heavy works without ſtrapping the joints with iron. In the roofs we are now deſcribing the diagonal pieces of the middle part only act purely as ties, while thoſe towards the ſides act as ſtruts or braces. Indeed they are ſeldom of ſo very ſimple conſtruction as we have deſcribed, and are more generally conſtructed like the ſketch in fig. 30. having two ſets of rafters AB, *a b*, and the angles are filled up with thin planks, which give great ſtiffneſs and ſtrength. They have alſo a double ſet of purlins, which connect the different truſſes. The roof being thus divided into ſquares, other purlins run between the middle points E of the rafters. The rafter is ſupported at E by a cheek put between it and the under rafter. The middle point of each ſquare of the roof is ſupported and ſtiffened by four braces, one of which ſpring from *e*, and its oppoſite from the ſimilar part of the adjoining truſs. The other two braces ſpring from the middle points of the lower purlins, which go horizontally from *a* and *b* to the next truſs, and are ſupported by planks in the ſame manner as the rafters. By this contrivance the whole becomes very ſtiff and ſtrong.

Roof of Rook.

We hope that the reader will not be diſpleaſed with our having taken ſome notice of what was the pride of our anceſtors, and conſtituted a great part of the finery of the grand hall, where the feudal lord aſſembled his vaſſals and diſplayed his magnificence. The intelligent mechanic will ſee much to commend; and all who look at theſe roofs admire their apparent flimſy lightneſs, and wonder at their duration. We have ſeen a hall of 50 feet wide, the roof of which was in four diviſions, like a kirb roof, and the truſſes were about 16 feet aſunder. They were ſingle rafters, as in fig. 30. and their dimenſions were only eight inches by ſix. The roof appeared perfectly ſound, and had been ſtanding ever ſince the year 1425. 50 Concluſion.

Much of what has been ſaid on this ſubject may be applied to the conſtruction of wooden bridges and the centers for turning the arches of ſtone-bridges. But the farther diſcuſſion of this muſt be the employment of another article.

ROOFING, the materials of which the roof of a houſe is compoſed. See the foregoing article.

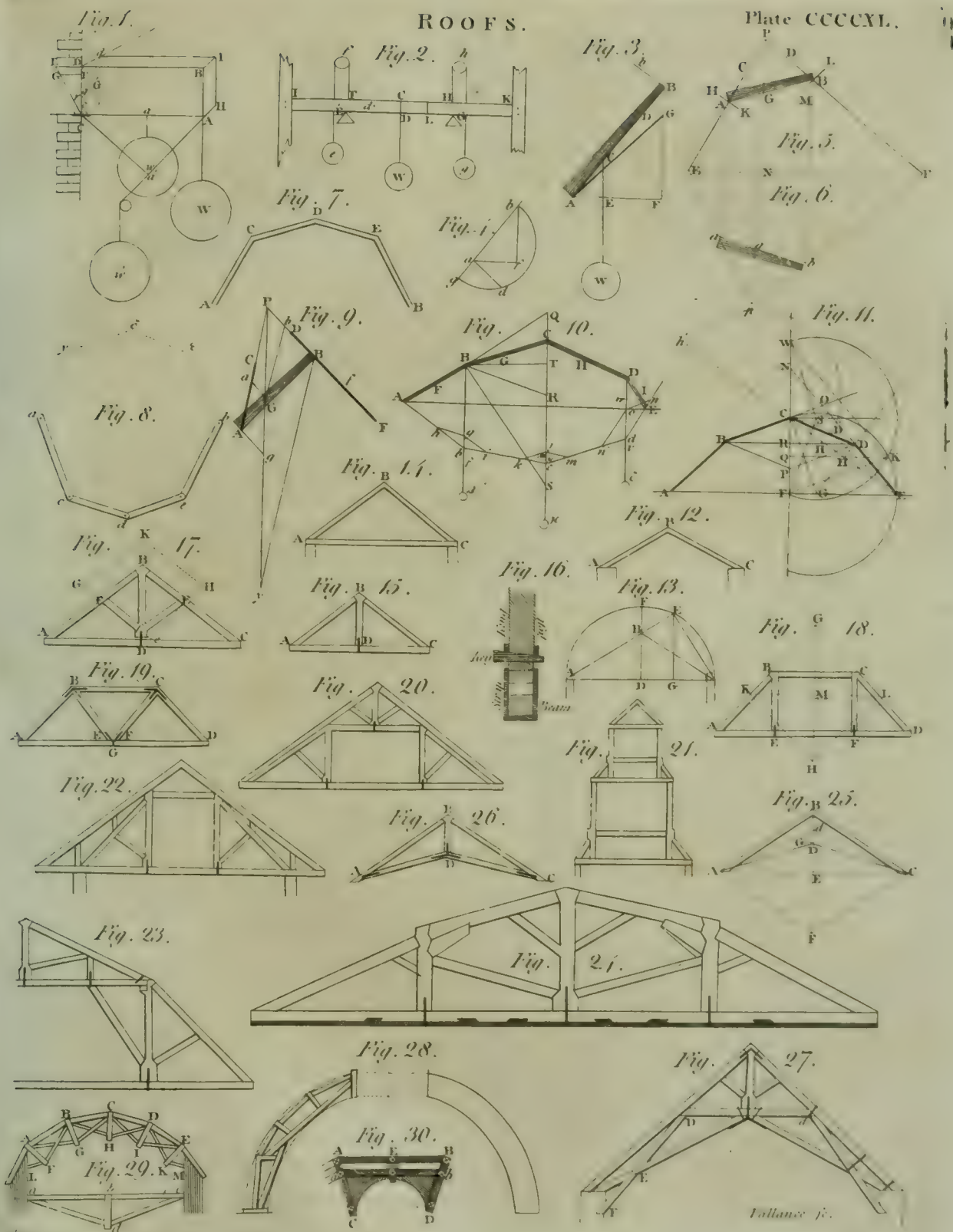
ROOK, in ornithology. See CORVUS.

Rooks are very deſtructive of corn, eſpecially of wheat. They ſearch out the lands where it is ſown, and watching them more carefully than the owners, they perceive when the ſeed firſt begins to ſhoot up its blade; this is the time of their feeding on it. They will not be at the pains of ſearching for it at random in the ſown land, for that is more trouble than ſo ſmall a grain will requite them for: but as ſoon as theſe blades appear, they are by them directed, without loſs of time or pains, to the places where the grains lie; and in three or four days time they will root up ſuch vaſt quantities, that a good crop is often thus deſtroyed in embryo. After a few days the wheat continuing to grow, its blades appear green above ground; and then the time of danger from theſe birds is over; for then the ſeeds are ſo far robbed of their mealy matter, that they are of no value to that bird, and it will no longer give itſelf the trouble to deſtroy them.

Wheat that is ſown ſo early as to ſhoot up its green blades before the harveſt is all carried in, is in no danger from theſe birds; becauſe while it is in a ſtate worth their ſearching for, the ſcattered corn in the harveſt fields is eaſier come at, and they feed wholly on this, neglecting the ſown grain. But as this cannot always be done, the farmers, to drive away theſe ravenous and miſchievous birds, dig holes in the ground and ſtick up the feathers of rooks in them, and hang up dead rooks on ſticks in ſeveral parts of the fields; but all this is of very little uſe; for the living rooks will tear up the ground about the feathers, and under the dead ones, to ſteal the ſeeds. A much better way than either is to tear ſeveral rooks to pieces, and to ſcatter the pieces over the fields; but this laſts but a little while, for the kites and other birds of prey ſoon carry off the pieces and feed upon them. A gun is a good remedy

while

ROOFS. Plate CCCCXL.



Rooke. while the perſon who has it is preſent; but as ſoon as he is gone, they will return with redoubled vigour to the field and tear up every thing before them.

The beſt remedy the farmer has is to watch well the time of the corn's being in the condition in which they feed upon it; and as this laſts only a few days, he ſhould keep a boy in conſtant pay to watch the field from day-break till the duſk of the evening. Every time they ſettle upon the ground to fly over it, the boy is to holloa, and throw up a dead rook into the air: this will always make them riſe; and by degrees they will be ſo tired of this conſtant diſturbance, that they will ſeek out other places of preying, and will leave the ground even before the time of the corn's being unfit for them. The reaſon of their riſing at the toſſing up of their dead fellow-creature is, that they are a bird extremely apprehenſive of danger, and they are always alarmed when one of their comrades riſes. They take this for the riſing of an out-bird, and all fly off at the ſignal.

ROOKE (Sir George), a gallant naval commander, born of an ancient and honourable family in Kent, in England, in 1650. His merit raiſed him by regular ſteps to be vice-admiral of the blue: in which ſtation he ſerved in the battle of La Hogue, on the 22d of May 1692; when it was owing to his vigorous behaviour, that the laſt ſtroke was given on that important day, which threw the French entirely into confuſion. But the next day he obtained ſtill more glory; for he had orders to go into La Hogue, and burn the enemy's ſhips as they lay there. There were 13 large men of war, which had crowded as far up as poſſible; and the tranſports, tenders, and ammunition ſhips, were diſpoſed in ſuch a manner that it was thought impoſſible to burn them. Beſides, the French camp was in ſight, with all the French and Iriſh troops that were to have been employed in the invaſion of England; and ſeveral batteries were raiſed on the coaſt, well provided with heavy artillery. The vice-admiral made the neceſſary preparations for obeying his orders, but found it impoſſible to carry in the ſhips of his ſquadron: he therefore ordered his light frigates to ply in cloſe to the ſhore; and having manned out all his boats, went himſelf to give directions for the attack, burnt that very night ſix three-deck-ſhips, and the next day ſix more, from 76 to 60 guns, together with moſt of the tranſports and ammunition veſſels; and this under the fire of all the batteries juſt mentioned, and in ſight of all the French and Iriſh troops: yet this bold action coſt the lives of no more than ten men. The vice-admiral's behaviour on this occaſion appeared ſo great to King William, that having no opportunity at that time of promoting him, he ſettled a penſion of 1000 l. per annum on him for life; and afterwards going to Portſmouth to view the fleet, went on board Mr. Rooke's ſhip, dined with him, and then conferred on him the honour of knighthood, he having a little before made him vice-admiral of the red.

In conſequence of other ſervices he was in 1694 raiſed to the rank of admiral of the blue: towards the cloſe of the next year, he was admiral of the white; and was alſo appointed admiral and commander in chief in the Mediterranean.

During King William's reign, Sir George was twice elected member for Portſmouth; and upon the acceſſion of Queen Anne in 1702, he was conſtituted vice-admiral and lieutenant of the admiralty of England, as alſo lieutenant of the fleets and ſeas of the kingdom. Upon the declaration of war againſt France he was ordered to command a fleet ſent againſt Cadiz, the duke of Ormond having the command of the land forces. On his paſſage home, receiving an account that the galleons, under the eſcort of a ſtrong French ſquadron, were got into the harbour of Vigo, he reſolved to attack them; and on the 11th of October came before the harbour of Rondondello, where the French commander had neglected nothing neceſſary for putting the place into the beſt poſture of defence. But notwithſtanding this, a detachment of 15 Engliſh and 10 Dutch men of war, of the line of battle, with all the fire ſhips, were ordered in; the frigates and bomb-veſſels followed; the great ſhips moved after them, and the army landed near Rondondello. The whole ſervice was performed under Sir George's directions, with admirable conduct and bravery; for, in ſhort, all the ſhips were deſtroyed or taken, prodigious damage done to the enemy, and vaſt wealth acquired by the allies. For this action Sir George received the thanks of the Houſe of Commons, a day of thankſgiving was appointed both by the queen and the ſtates-general, and Sir George was promoted to a ſeat in the privy-council; yet, notwithſtanding this, the Houſe of Lords reſolved to inquire into his conduct at Cadiz. But he ſo fully juſtified himſelf, that a vote was paſſed, approving his behaviour. Rooke and Root.

In the ſpring of the year 1704, Sir George commanded the ſhips of war which conveyed King Cha. III. of Spain to Liſbon. In July, he attacked Gibralter; when, by the bravery of the Engliſh ſeamen, the place was taken on the 24th, though the town was extremely ſtrong, well furniſhed with ammunition, and had 100 guns mounted, all facing the ſea and the narrow paſſes to the land: An action which was conceived and executed in leſs than a week; though it has ſince endured ſieges of many months continuance, and more than once baffled the united forces of France and Spain. This brave officer being at laſt obliged, by the prevalence of party-ſpirit, to quit the ſervice of his country, retired to his ſeat in Kent; where he ſpent the remainder of his days as a private gentleman.

He was thrice married; and by his ſecond lady Mrs Luttrell left one ſon. He died January 24. 1708-9, in his 58th year, and was buried in Canterbury cathedral, where a monument is erected to his memory. In his private life he was a good huſband and a kind maſter, lived hoſpitably towards his neighbours, and left behind him a moderate fortune; ſo moderate, that when he came to make his will, it ſurpriſed thoſe who were preſent: but Sir George aſſigned the reaſon in a few words, "I do not leave much (ſaid he), but what I leave was honeſtly gotten; it never coſt a ſailor a tear, or the nation a farthing."

ROOM, a chamber, parlour, or other apartment in a houſe. See ARCHITECTURE and VENTILATION.

ROOT, among botaniſts, denotes that part of a plant which imbibes the nutritious juices of the earth, and tranſmits them to the other parts. See PLANT and RADIX.

Colours extracted from Roots. See *Colour-Making*, n° 41.

Root, Rope-making.

Root, in algebra and arithmetic, denotes any number which, multiplied by itſelf once or oftener, produces any other number; and is called the *ſquare*, *cube*, *biquadrate*, &c. *root*, according to number of multiplications. Thus, 2 is the ſquare-root of 4; the cube-root of 8; the biquadrate-root of 16, &c.

ROPE, is a word too familiar to need a definition; and we need ſay no more than that it is only applied to a conſiderable collection of twiſted fibres. Smaller bands are called lines, ſtrings, cords; and it is not applied with great propriety even to thoſe, unleſs they are compoſed of ſmaller things of the ſame kind twiſted together. Two hay bands twiſted together would be called a *rope*. All the different kinds of this manufacture, from a fiſhing line or whip-cord to the cable of a firſt rate ſhip of war, go by the general name of CORDAGE.

Ropes are made of every ſubſtance that is ſufficiently fibrous, flexible, and tenacious, but chiefly of the barks of plants. The Chineſe and other orientals even make them of the ligneous parts of ſeveral plants, ſuch as certain bamboos and reeds, the ſtems of the aloes, the fibrous covering of the cocoa nut, the filaments of the cotton pod, and the leaves of ſome graſſes, ſuch as the ſparte (*Lygeum*, Linn). The aloe (*Agave*, Linn.) and the ſparte exceed all others in ſtrength. But the barks of plants are the moſt productive of fibrous matter fit for this manufacture. Thoſe of the Linden tree (*Tilia*), of the willow, the bramble, the nettle, are frequently uſed: but hemp and flax are of all others the beſt; and of theſe the hemp is preferred, and employed in all cordage exceeding the ſize of a line, and even in many of this denomination.

Hemp is very various in its uſeful qualities. Theſe are great ſtrength, and the length and fineneſs of the fibre. Being a plant of very greedy growth, it ſucks up much of the unaltered juices of the ſoil, and therefore differs greatly according to its ſoil, climate, and culture. The beſt in Europe comes to us through Riga, to which port it is brought from very diſtant places to the ſouthward. It is known by the name of *Riga rein* (that is, clean) hemp. Its fibre is not the longeſt (at leaſt in the dreſſed ſtate in which we get it) of all others, but it is the fineſt, moſt flexible, and ſtrongeſt. The next to this is ſuppoſed to be the Peterſburgh braak hemp. Other hemps are eſteemed nearly in the following order:—Riga outſhot, Peterſburgh outſhot, hemp from Koningſburgh, Archangel, Sweden, Memel. *Clowding* is a name given to a hemp that comes from various places, long in the fibre, but coarſe and harſh, and its ſtrength is inferior to hemps which one would think weaker. Its texture is ſuch, that it does not admit ſplitting with the hatchel ſo as to be more completely dreſſed. It is therefore kept in its coarſe form, and uſed for inferior cordage. It is however a good and ſtrong hemp, but will not make fine work. There are doubtleſs many good hemps in the ſouthern parts of Europe, but little of them is brought to our market. Codilla, half clean, &c. are portions of the abovementioned hemps, ſeparated by the dreſſing, and may be conſidered as broken fibres of thoſe hemps.

Only the firſt qualities are manufactured for the rigging of the Britiſh navy and for the ſhips of their Eaſt India company.

ROPE-MAKING is an art of very great importance; and there are few that better deſerve the attention of the intelligent obſerver. Hardly any art can be carried on without the aſſiſtance of the rope-maker. Cordage makes the very ſinews and muſcles of a ſhip; and every improvement which can be made in its preparation, either in reſpect to ſtrength or pliableneſs, muſt be of immenſe ſervice to the mariner, and to the commerce and the defence of nations.

Rope-making.

1 Importance of the art of rope-making.

We ſhall give a very ſhort account of the manufacture, which will not indeed fully inſtruct the artificers, but will give ſuch a view of the proceſs as ſhall enable the reader to judge, from principle, of the propriety of the different parts of the manipulation, and perceive its defects, and the means for removing them.

2 The aim of which is to unite the ſtrength of numerous fibres.

The aim of the rope-maker is to unite the ſtrength of a great number of fibres. This would be done in the completeſt manner by laying the fibres parallel to each other, and faſtening the bundle at the two ends: but this would be of very limited uſe, becauſe the fibres are ſhort, not exceeding three feet and an half at an average. They muſt therefore be entangled together, in ſuch a manner that the ſtrength of a fibre ſhall not be able to draw it out from among the reſt of the bundle. This is done by twiſting or twining them together, which cauſes them mutually to compreſs each other. When the fibres are ſo diſpoſed in a long ſkain, that their ends ſucceed each other along its length, without many of them meeting in one place, and this ſkain is twiſted round and round, we may cauſe them to compreſs each other to any degree we pleaſe, and the friction on a fibre which we attempt to pull out may be more than its coheſion can overcome. It will therefore break. Conſequently, if we pull at this twiſted ſkain, we will not ſeparate it by drawing one parcel out from among the reſt, but the whole fibres will break; and if the diſtribution of the fibres has been very equable, the ſkain will be nearly of the ſame ſtrength in every part. If there is any part where many ends of fibres meet, the ſkain will break in that part.

3 Theſe fibres may be ſo much twiſted as to break with the leaſt additional twiſt.

We know very well that we can twiſt a ſkain of fibres ſo very hard, that it will break with any attempt to twiſt it harder. In this ſtate all the fibres are already ſtrained to the utmoſt of their ſtrength. Such a ſkain of fibres can have no ſtrength. It cannot carry a weight, becauſe each fibre is already ſtrained in the ſame manner as if loaded with as much weight as it is able to bear. What we have ſaid of this extreme caſe is true in a certain extent of every degree of twiſt that we give the fibres. Whatever force is actually exerted by a twiſted fibre, in order that it may ſufficiently compreſs the reſt to hinder them from being drawn out, muſt be conſidered as a weight hanging on that fibre, and muſt be deduced from its abſolute ſtrength of coheſion, before we can eſtimate the ſtrength of the ſkain. The ſtrength of the ſkain is the remainder of the abſolute ſtrength of the fibres, after we have deduced the force employed in twiſting them together.

4 Practical inference

From this obſervation may be deduced a fundamental principle in rope-making, that all twiſting, beyond what is neceſſary for preventing the fibres from being drawn out without breaking, diminiſhes the ſtrength of the cordage, and ſhould be avoided when in our power. It is of importance to keep this in mind.

Rope-making.

It is neceſſary then to twiſt the fibres of hemp together, in order to make a rope; but we ſhould make a very bad rope if we contented ourſelves with twiſting together a bunch of hemp ſufficiently large to withſtand the ſtrains to which the rope is to be expoſed. As ſoon as we let it go out of our hands, it would untwiſt itſelf, and be again a looſe bundle of hemp; for the fibres are ſtrained, and they are in a conſiderable degree elaſtic; they contract again, and thus untwiſt the rope or ſkain. It is neceſſary to contrive the twiſt in ſuch a manner, that the tendency to untwiſt in one part may act againſt the ſame tendency in another and balance it. The proceſs, therefore, of rope-making is more complicated.

5 Method to be obſerved in twiſting the fibres.

6 Spinning of rope-yarns.

The firſt part of this proceſs is SPINNING of ROPE-YARNS. This is done in various ways, and with different machinery, according to the nature of the intended cordage. We ſhall confine our deſcription to the manufacture of the larger kinds, ſuch as are uſed for the ſtanding and running rigging of ſhips.

7 Deſcription of the apparatus and manner of uſing it. Plate CCCCXLI.

An alley or walk is incloſed for the purpoſe, about 200 fathoms long, and of a breadth ſuited to the extent of the manufacture. It is ſometimes covered above. At the upper end of this ROPE-WALK is ſet up the ſpinning-wheel, of a form reſembling that in fig. 1. The band of this wheel goes over ſeveral rollers called WHIRLS, turning on pivots in braſs holes. The pivots at one end come through the frame, and terminate in little hooks. The wheel being turned by a winch, gives motion in one direction to all thoſe whirls. The ſpinner has a bundle of dreſſed hemp round his waiſt, with the two ends meeting before him. The hemp is laid in this bundle in the ſame way that women ſpread the flax on the diſtaff. There is great variety in this; but the general aim is to lay the fibres in ſuch a manner, that as long as the bundle laſts there may be an equal number of the ends at the extremity, and that a fibre may never offer itſelf double or in a bight. The ſpinner draws out a proper number of fibres, twiſts them with his fingers, and having got a ſufficient length detached, he fixes it to the hook of a whirl. The wheel is now turned, and the ſkain is twiſted, becoming what is called a ROPE-YARN, and the ſpinner walks backwards DOWN the rope-walk. The part already twiſted draws along with it more fibres out of the bundle. The ſpinner aids this with his fingers, ſupplying hemp in due proportion as he walks away from the wheel, and taking care that the fibres come in equally from both ſides of his bundle, and that they enter always with their ends, and not by the middle, which would double them. He ſhould alſo endeavour to enter every fibre at the heart of the yarn. This will cauſe all the fibres to mix equally in making it up, and will make the work ſmooth, becauſe one end of each fibre is by this means buried among the reſt, and the other end only lies outward; and this, in paſſing through the graſp of the Spinner, who preſſes it tight with his thumb and palm, is alſo made to lie ſmooth. The greateſt fault that can be committed in ſpinning is to allow a ſmall thread to be twiſted off from one ſide of the hemp, and then to cover this with hemp ſupplied from the other ſide: for it is evident that the fibres of the central thread make very long ſpirals, and the ſkin of fibres which covers them muſt be much more oblique. This covering has but little connection with what is below it, and will eaſily be detached. But even while it remains, the yarn cannot be ſtrong; for on pulling it, the middle part, which lies the ſtraighteſt, muſt bear all the ſtrain, while the outer fibres, that are lying obliquely, are only drawn a little more parallel to the axis. This defect will always happen if the hemp be ſupplied in a conſiderable body to a yarn that is then ſpinning ſmall. Into whatever part of the yarn it is made to enter, it becomes a ſort of looſely connected wrapper. Such a yarn, when untwiſted a little, will have the appearance of fig. 2. while a good yarn looks like fig. 3. A good ſpinner therefore endeavours always to ſupply the hemp in the form of a thin flat ſkain with his left hand, while his right is employed in graſping firmly the yarn that is twining off, and in holding it tight from the whirl, that it may not run into loops or KINKS.

Rope-making.

It is evident, that both the arrangement of the fibres and the degree of twiſting depend on the ſkill and dexterity of the ſpinner, and that he muſt be inſtructed, not by a book, but by a maſter. The degree of twiſt depends on the rate of the wheel's motion, combined with the retrograde walk of the ſpinner.

We may ſuppoſe him arrived at the *lower* end of the walk, or as far as is neceſſary for the intended length of his yarn. He calls out, and another ſpinner immediately detaches the yarn from the hook of the whirl, gives it to another, who carries it aſide to the reel, and this ſecond ſpinner attaches his own hemp to the whirl hook. In the mean time, the firſt ſpinner keeps faſt hold of the end of his yarn; for the hemp, being dry, is very elaſtic, and if he were to let it go out of his hand it would inſtantly untwiſt, and become little better than looſe hemp. He waits, therefore, till he ſees the reeler begin to turn the reel, and he goes ſlowly up the walk, keeping the yarn of an equal tightneſs all the way, till he arrives at the wheel, where he waits with his yarn in hand till another ſpinner has finiſhed his yarn. The firſt ſpinner takes it off the whirl hook, joins it to his own, that it may follow it on the reel, and begins a new yarn.

8 Different kinds of rope-yarns.

Rope-yarns, for the greateſt part of the large rigging, are from a quarter of an inch to ſomewhat more than a third of an inch in circumference, or of ſuch a ſize that 160 fathoms weigh from 3½ to 4 pounds when white. The different ſizes of yarns are named from the number of them contained in a ſtrand of a rope of three inches in circumference. Few are ſo coarſe that 16 will make a ſtrand of Britiſh cordage; 18 is not unfrequent for cable yarns, or yarns ſpun from harſh and coarſe hemp; 25 is, we believe, the fineſt ſize which is worked up for the rigging of a ſhip. Much finer are indeed ſpun for ſounding lines, fiſhing lines, and many other marine uſes and for the other demands of ſociety. Ten good ſpinners will work up above 600 weight of hemp in a day; but this depends on the weather. In very dry weather the hemp is very elaſtic, and requires great attention to make ſmooth work. In the warmer climates, the ſpinner is permitted to moiſten the rag with which he graſps the yarn in his right hand for each yarn. No work can be done in an open ſpinning walk in rainy weather, becauſe the yarns would not take on the tar, if immediately tarred, and would rot if kept on the reel for a long time.

The ſecond part of the proceſs is the converſion of

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Method of converting the rope-yarns into lines, cords, or lines.

the yarns into what may with propriety be called a rope, cord, or line. That we may have a clear conception of the principle which regulates this part of the proceſs, we ſhall begin with the ſimpleſt poſſible caſe, the union of two yarns into one line. This is not a very uſual fabric for rigging, but we ſelect it for its ſimplicity.

When hemp has been ſplit into very fine fibres by the hatchel, it becomes exceedingly ſoft and pliant, and after it has lain for ſome time in the form of fine yarn, it may be unreeled and thrown looſe, without loſing much of its twiſt. Two ſuch yarns may be put on the whirl of a ſpinning wheel, and thrown, like flaxen yarn, ſo as to make ſewing thread. It is in this way, indeed, that the ſailmaker's ſewing thread is manufactured; and when it has been kept on the reel, or on balls or bobbins, for ſome time, it retains its twiſt as well as its uſes require. But this is by no means the caſe with yarns ſpun for great cordage. The hemp is ſo elaſtic, the number of fibres twiſted together is ſo great, and the diameter of the yarn (which is a ſort of lever on which the elaſticity of the fibre exerts itſelf) is ſo conſiderable, that no keeping will make the fibres retain this conſtrained poſition. The end of a rope-yarn being thrown looſe, it will immediately untwiſt, and this with conſiderable force and ſpeed. It would, therefore, be a fruitleſs attempt to twiſt two ſuch yarns together; yet the ingenuity of man has contrived to make uſe of this very tendency to untwiſt not only to counteract itſelf, but even to produce another and a permanent twiſt, which requires force to undo it, and which will recover itſelf when this force is removed. Every perſon muſt recollect that, when he was twiſted a packthread very hard with his fingers between his two hands, if he ſlackens the thread by bringing his hands nearer together, the packthread will immediately curl up, running into loops or kinks, and will even twiſt itſelf into a neat and firm cord. Familiar as this fact is, it would puzzle any perſon not accuſtomed to theſe ſubjects to explain it with diſtinctneſs. We ſhall conſider it with ſome care, not as piece of mechanical curioſity, but as a fundamental principle in this manufacture, which will give us clear inſtructions to direct us in the moſt delicate part of the whole proceſs. And we beg the attention of the artiſts themſelves to a thing which they ſeem to have overlooked.

Let *m d*, *n d* (fig. 4) be two yarns fixed to one point *d*, and let both of them be twiſted, each round its own axis, in the direction *a b c*, which will cauſe the fibres to lie in a ſcrew form, as repreſented in the figure. If the end *d* of the yarn *m d* were at liberty to turn round the point *d*, it would turn accordingly, as often as the end *m* is turned round, and the yarn would acquire no twiſt; but being attached to ſome ſolid body it cannot turn without turning this body. It has, however, this tendency, and the body muſt be forcibly prevented from turning. If it be held faſt for a time, and then let go, it will be turned round, and it will not ſtop till it has turned as often as the end *m* has been twiſted, and now all the twiſt will be undone. Thus it is the tendency of the yarn *m d* to untwiſt at the end *d* (becauſe it is kept faſt at *m*), which produces this motion of the body attached to it at *d*. What we have ſaid of the yarn *m d* is equally true of the yarn *n d*. Both tend to turn, and will turn, the body attached at *d* round the common axis, in the ſame direction in which they are twiſted. Let fig. 5. be ſuppoſed a croſs ſection of the two yarns touching each other at *d*, and there glued to a board. The fibres of each pull obliquely, that is, they both pull away from the board, and pull laterally. The direction of this lateral pull of the fibres in the circumference of each yarn is repreſented by the little darts drawn round the circumferences. Theſe actions directly oppoſe and balance each other at *d*; but in the ſemicircles *o e t*, *t f o*, they evidently conſpire to turn the board round in the ſame direction. The ſame may be ſaid of the outer halves of any circles deſcribed within theſe. In the inner halves of theſe inner circles the actions of ſome fibres oppoſe each other; but in every circle there are many more conſpiring actions than oppoſing ones, and the conſpiring actions exert themſelves by longer levers, ſo that their joint momentum greatly exceeds that of the oppoſing forces. It may be demonſtrated, that if all the fibres exert equal forces, the force which tends to turn the board round the common axis is $\frac{2}{3}$ of the force employed to twiſt both the yarns.

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Suppoſe then that the ſolid body to which the yarns are attached is at liberty to turn round the common axis; it cannot do this without carrying the yarns round with it. They muſt, therefore, turn round each other, and thus compoſe a rope or cord *k l*, having its component yarns (now called *ſtrands*) lying in a direction oppoſite to that of the fibres in each ſtrand. The rope will take this twiſt, while each of the ſtrands is really untwiſting, and the motion will not ſtop till all is again in equilibrio. If the yarn had no diameter and no rigidity, their elaſtic contraction would not be balanced till the cord had made half the number of turns which had been given to that part of the yarn which is thus doubled up. But, as the yarns have a ſenſible diameter, the ſame ultimate contraction of the fibres will be expended by the twiſting of the cord in fewer turns, even if the yarns had no rigidity. The turns neceſſary for this purpoſe will be ſo much fewer, in proportion to the twiſt of the yarns, as the fibres of the yarn lie more obliquely, that is, as the yarns are more twiſted. But further, this contractile force has to overcome the rigidity or ſtiffneſs of the yarns. This requires force merely to *bend* it into the ſcrew form; and therefore, when all is again at reſt, the fibres are in a ſtate of ſtrain, and the rope is not ſo much cloſed by doubling as it would have been had the yarns been ſofter. If any thing can be done to it in this ſtate which will ſoften the yarns, it will twiſt itſelf more up. It has therefore a *tendency* to twiſt more up; and if this be aided by an external force which will bend the ſtrands, this will happen. Beating it with a ſoft mallet will have this effect; or, if it be forcibly twiſted till the fibres are allowed to contract as much as they would have done had the yarn been perfectly ſoft, the cord will keep this twiſt without any effort; and this muſt be conſidered as its moſt perfect ſtate, in relation to the degree of twiſt originally given to the yarns. It will have no tendency to run into kinks, which is both troubleſome and dangerous, and the fibres will not be exerting any uſeleſs effort.

To attain this ſtate ſhould therefore be the aim of every part of this ſecond proceſs; and this principle ſhould be kept in view through the whole of it.

The component parts of a rope are called ſtrands, as has

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has been already obſerved; and the operation of uniting them with a permanent twiſt is called *laying* or *cloſing*, the latter term being chiefly appropriated to cables and other very large cordage.

10 Deſcription of the machinery, and mode of uſing it.

Lines and cordage leſs than 1½ inches circumference are laid at the ſpinning-wheel. The workman faſtens the ends of each of two or three yarns to ſeparate whirl-hooks. The remote ends are united in a knot. This is put on one of the hooks of a ſwivel called the *loper*, repreſented in fig. 6. and care is taken that the yarns are of equal lengths and twiſt. A piece of ſoft cord is put on the other hook of the loper; and, being put over a pulley ſeveral feet from the ground, a weight is hung on it, which ſtretches the yarn. When the workman ſees that they are equally ſtretched, he orders the wheel to be turned in the ſame direction as when twining the yarns. This would twine them harder; but the ſwivel of the loper gives way to the ſtrain, and the yarns immediately twiſt around each other, and form a line or cord. In doing this the yarns loſe their twiſt. This is reſtored by the wheel. But this ſimple operation would make a very bad line, which would be ſlack, and would not hold its twiſt; for, by the turning of the loper, the ſtrands twiſt immediately together, to a great diſtance from the loper. By this turning of the loper the yarns are untwiſted. The wheel reſtores their twiſt only to that part of the yarns that remains ſeparate from the others, but cannot do it in that part where they are already twined round each other, becauſe their mutual preſſure prevents the twiſt from advancing. It is, therefore, neceſſary to retard this tendence to twine, by keeping the yarns apart. This is done by a little tool called the top, repreſented in fig. 7.

It is a truncated cone, having three or more notches along its ſides, and a handle called the ſtaff. This is put between the ſtrands, the ſmall end next the loper, and it is preſſed gently into the angle formed by the yarns which lie in the notches. The wheel being now turned, the yarns are more twiſted, or *hardened up*, and their preſſure on the top gives it a ſtrong tendency to come out of the angle, and alſo to turn round. The workman does not allow this till he thinks the yarns ſufficiently hardened. Then he yields to the preſſure, and the top comes away from the ſwivel, which immediately turns round, and the line begins to lay.—Gradually yielding to this preſſure, the workman ſlowly comes up towards the wheel, and the laying goes on, till the top is at laſt cloſe to the wheel, and the work is done. In the mean time, the yarns are ſhortened, both by the twining of each and the laying of the cord. The weight, therefore, gradually riſes. The uſe of this weight is evidently to oblige the yarn to take a proper degree of twiſt, and not run into kinks.

A cord or line made in this way has always ſome tendency to twiſt a little more. However little friction there may be in the loper, there is ſome, ſo that the turns which the cord has made in the laying are not enough to balance completely the elaſticity of the yarns; and the weight being appended cauſes the ſtrands to be more nearly in the direction of the axis, in the ſame manner as it would ſtretch and untwiſt a little any rope to which it is hung. On the whole, however, the twiſt of a laid line is permanent, and not like that upon thread doubled or thrown in a mill, which remains only in conſequence of the great ſoftneſs and flexibility of the yarn.

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The proceſs for laying or cloſing large cordage is conſiderably different from this. The ſtrands of which the rope is compoſed conſiſt of many yarns, and require a conſiderable degree of hardening. This cannot be done by a whirl driven by a wheel-band; it requires the power of a crank turned by the hand. The ſtrands, when properly hardened, become very ſtiff, and when bent round the top are not able to tranſmit force enough for laying the heavy and unpliant rope which forms beyond it. The elaſtic twiſt of the hardened ſtrands muſt, therefore, be aſſiſted by an external force. All this requires a different machinery and a different proceſs.

11 Large or hawſer-laid cordage is differently formed.

12 Machinery and mode of uſing it in this caſe.

At the upper end of the walk is fixed up the *tackle-board*, fig. 8. This conſiſts of a ſtrong oaken plank called a *breaſt board*, having three or more holes in it, ſuch as A, B, C, fitted with braſs or iron plates. Into theſe are put iron cranks, called heavers, which have hooks, or forelocks, and keys, on the ends of their ſpindles. They are placed at ſuch a diſtance from each other, that the workmen do not interfere with each other while turning them round. This breaſt-board is fixed to the top of ſtrong poſts well ſecured by ſtruts or braces facing the lower end of the walk. At the lower end is another breaſt-board fixed to the upright poſts of a ſledge, which may be loaded with ſtones or other weights. Similar cranks are placed in the holes of this breaſt-board. The whole goes by the name of the *ſledge*; (ſee fig. 9.) The top neceſſary for cloſing large cordage is too heavy to be held in the hand. It therefore has a long ſtaff, which has a truck on the end. This reſts on the ground; but even this is not enough in laying great cables. The top muſt be ſupported on a carriage, as ſhown in fig. 10. where it muſt lie very ſteady, and need no attendance, becauſe the maſter workman has ſufficient employment in attending to the manner in which the ſtrands cloſe behind the top, and in helping them by various methods. The top is, therefore, fixed to the carriage by laſhing its ſtaff to the two upright poſts. A piece of ſoft rope, or ſtrap, is attached to the handle of the top by the middle, and its two ends are brought back and wrapped ſeveral times tight round the rope, in the direction of its twiſt, and bound down. This is ſhown at W, and it greatly aſſiſts the laying of the rope by its friction. This both keeps the top from flying too far from the point of union of the ſtrands, and brings the ſtrands more regularly into their places.

The firſt operation is *warping* the yarns. At each end of the walk are frames called warping frames, which carry a great number of reels or winches filled with rope-yarn. The foreman of the walk takes off a yarn end from each, till he has made up the number neceſſary for his rope or ſtrand, and bringing the ends together, he paſſes the whole through an iron ring fixed to the top of a ſtake driven into the ground, and draws them through: then a knot is tied on the end of the bundle, and a workman pulls it through this ring till the intended length is drawn off the reels. The end is made faſt at the bottom of the walk, or at the ledge, and the foreman comes back along the ſkein of yarns, to ſee that none are hanging ſlacker than the reſt. He

take-

[illegible] as are slack, and draws them [illegible] till he reaches the upper end, [illegible] again adjusts their [illegible] all together in a knot, to [illegible] the hook of a tackle, the other block of [illegible] called the *warping-post*. The [illegible] tackle, and then separated [illegible] of these is knotted apart [illegible] at their upper ends are made [illegible] the cranks in the tackle-board, and [illegible] are fastened to the cranks in [illegible] is kept in its place by a [illegible] the strands are again stretched in [illegible] and every thing adjusted, so that the sledge [illegible] square on the walk, and then a proper weight [illegible] on it. The tackle is now cast off, and the cranks are turned at both ends, in the contrary direction to the twist of the yarns. (In some kinds of cordage the cranks are turned the same way with the spinning twist). By this the strands are twisted and hardened up; and as they contract by this operation, the sledge is dragged up the walk. When the foreman thinks the strands sufficiently hardened, which he estimates by the motion of the sledge, he orders the heavers at the cranks to stop. The middle strand at the sledge is taken off from the crank. This crank is taken out, and a stronger one put in its place at D, fig. 9. The other strands are taken off from their cranks, and all are joined on the hook which is now in the middle hole. The top is then placed between the strands, and, being pressed home to the point of their union, the carriage is placed under it, and it is firmly fixed down. Some weight is taken off the sledge. The heavers now begin to turn at both ends. Those at the tackle-board continue to turn as they did before; but the heavers at the sledge turn in the opposite direction to their former motion, so that the cranks at both ends are now turning one way. By the motion of the sledge crank the top is forced away from the knot, and the rope begins to close. The heaving at the upper end restores to the strand the twist which they are constantly losing by the laying of the rope. The workmen judge of this by making a chalk mark on intermediate points of the strands, where they lie on the stakes which are set up along the walk for their support. If the twist of the strands is diminished by the motion of closing, they will lengthen, and the chalk mark will move away from the tackle-board: but if the twist increases by turning the cranks at the tackle-board, the strands will shorten, and the mark will come nearer to it.

As the closing of the rope advances, the whole shortens, and the sledge is dragged up the walk. The top moves faster, and at last reaches the upper end of the walk, the rope being now laid. In the mean time, the sledge has moved several fathoms from the place where it was when the laying began.

These motions of the sledge and top must be exactly adjusted to each other. The rope must be of a certain length. Therefore the sledge must stop at a certain place. At that moment the rope should be laid; that is, the top should be at the tackle-board. In this consists the address of the foreman. He has his attention directed both days. He looks at the strands, and when he sees any of them hanging slacker between the stakes than the others, he calls to the heavers at the tackle-board to heave more upon that strand. He finds it more difficult to regulate the motion of the top. It requires a considerable force to keep it in the angle of the strands, and it is always disposed to start forward. To prevent or check this, some straps of soft rope are brought round the staff of the top, and then wrapped several times round the rope behind the top, and kept firmly down by a lanyard or bandage, as is shown in the figure. This both holds back the top and greatly assists the laying of the rope, causing the strands to fall into their places, and keep close to each other. This is sometimes very difficult, especially in ropes composed of more than three strands. It will greatly improve the laying the rope, if the top have a sharp, smooth, tapering pin of hard wood, pointed at the end, projecting so far from the middle of its smaller end, that it gets in between the strands which are closing. This supports them, and makes their closing more gradual and regular. The top, its notches, the pin, and the warp or strap, which is lapped round the rope, are all smeared with grease or soap, to assist the closing. The foreman judges of the progress of closing chiefly by his acquaintance with the walk, knowing that when the sledge is abreast of a certain stake the top should be abreast of a certain other stake. When he finds the top too far down the walk, he slackens the motion at the tackle-board, and makes the men turn briskly at the sledge. By this the top is forced up the walk, and the laying of the rope accelerates, while the sledge remains in the same place, because the strands are losing their twist, and are lengthening, while the closed rope is shortening. When, on the other hand, he thinks the top too far advanced, and fears that it will be at the head of the walk before the sledge has got to its proper place, he makes the men heave briskly on the strands, and the heavers at the sledge crank to work softly.—This quickens the motion of the sledge by shortening the strands; and by thus compensating what has been overdone, the sledge and top come to their places at once, and the work appears to answer the intention.

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13 Some improprieties in this process pointed out, and

But this is a bad manner of proceeding. It is evident, that if the strands be kept to one degree of hardness throughout, and the heaving at the sledge be uniformly continued, the rope will be uniform. It may be a little longer or shorter than was intended, and the laying may be too hard in proportion to the twist of the strands, in which case it will not keep it; or it may be too slack, and the rope will tend to twist more. Either of these faults are discoverable by slackening the rope before it come off the hooks, and it may then be corrected. But if the error in one place be compensated by that in another, this will not be easily seen before taking off the hooks; and if it is a large and stiff rope, it will hardly ever come to an equable state in its different parts, but will be apt to run into loops during service.

It is, therefore, of importance to preserve the uniformity throughout the whole. Mr Du Hamel, in his great work on rope-making, proposes a method which is very exact, but requires an apparatus which is cumbersome, and which would be much in the way of the workmen. We think that the following method would be extremely easy, embarrass no one, and is perfectly exact. Having determined the proportion between the velocity of the top and sledge, let the diameter of the truck

14 Another method proposed. &c.

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truck of the top carriage be to that of another truck fixed to the ſledge, in the proportion of the velocity of the top to that of the ſledge. Let a mark be made on the rim of each; let the man at the ſledge make a ſignal every time that the mark on the ſledge truck is uppermoſt. The mark on the carriage truck ſhould be uppermoſt at the ſame inſtant; and in this way the foreman knows the ſtate of the rope at all times without quitting his ſtation. Thus, in making a cable of 120 fathoms, it is uſual to warp the yarns 180 fathoms, and to harden them up to 140 before cloſing. Therefore, in the cloſing, the top muſt move 140 fathoms, and the ſledge only 20. The diameter of the carriage truck ſhould therefore be ſeven times the diameter of the ſledge truck.

We have hitherto proceeded on the ſuppoſition, that the twiſt produced by the cranks is propagated freely along the ſtrands and along the cloſing rope. But this is not the caſe. It is almoſt unavoidable that the twiſt is greater in the neighbourhood of the crank which produces it. The ſtrands are frequently of very conſiderable weight, and lie heavy on the ſtakes. Force is therefore neceſſary to overcome their friction, and it is only the overplus that is propagated beyond the ſtake. It is proper to lift them up from time to time, and let them fall down again, as the ſawer does with his marking line. This helps the twiſt to run along the ſtrand. But this is not enough for the cloſed rope, which is of much greater weight, and much ſtiffer.—When the top approaches the tackle-board, the heaving at the ſledge could not cauſe the ſtrands immediately behind the top to cloſe well, without having previouſly produced an extravagant degree of twiſt in the intermediate rope. The effort of the crank muſt therefore be aſſiſted by men ſtationed along the rope, each furniſhed with a tool called a *woolder*. This is a ſtout oak ſtick about three feet long, having a ſtrap of ſoft rope-yarn or cordage faſtened on its middle or end. The ſtrap is wrapped round the laid rope, and the workman works with the ſtick as a lever, twiſting the rope round in the direction of the crank's motion. The woolders ſhould keep their eye on the men at the crank, and make their motion correſpond with his. Thus they ſend forward the twiſt produced by the crank, without either increaſing or diminiſhing it, in that part of the rope which lies between them and the ſledge.

It is uſual before taking the rope from the hooks to heave a while at the ſledge end, in order to harden the rope a little. They do this ſo as to take it up about $\frac{1}{60}$. The propriety or impropriety of this practice depends entirely on the proportion which has been previouſly obſerved between the hardening of the ſtrands and the twiſting of the cloſing rope. It is, in all caſes, better to adjuſt theſe preciſely, and then nothing remains to be done when the top has arrived at the upper end of the walk. The making of two ſtrand and three ſtrand line pointed out the principle which ſhould be attended to in this caſe; namely, that the twiſt given to the rope in laying ſhould be preciſely what a perfectly ſoft rope would give to itſelf. We do not ſee any reaſon for thinking that the proportion between the number of turns given to the ſtrands and the number of turns given to the laid line by its own elaſticity, will vary by any difference of diameter. We would therefore recommend to the artiſts to ſettle this proportion by experiment. The line ſhould be made of the fineſt, ſmalleſt, and ſofteſt threads or yarn. Theſe ſhould be made into ſtrands, and the ſtrands ſhould be hardened up in the direction contrary to the ſpinning twiſt. The rope ſhould then be laid, hanging perpendicularly, with a ſmall weight on the top to keep it down, and a very ſmall weight at the end of the rope. The number of turns given to the ſtrands ſhould be carefully noticed, and the number of turns which the rope takes of itſelf in cloſing. The weight ſhould then be taken off, and the rope will make a few turns more. This whole number will never exceed what is neceſſary for the equilibrium; and we imagine it will not fall much ſhort of it. We are clearly of opinion an exact adjuſtment of this particular will tend greatly to improve the art of rope-making, and that experiments on good principles for aſcertaining this proportion would be highly valuable, becauſe there is no point about which the artiſts themſelves differ more in their opinions and practice.

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15 Mode of making ſhroud-laid cordage of four ſtrands.

The cordage, of which we have been deſcribing the manufacture, is ſaid to be HAWSER-LAID. It is not uncommon to make ropes of four ſtrands. Theſe are uſed for ſhrouds, and this cordage is therefore called SHROUD-LAID cordage. A rope of the ſame ſize and weight muſt be ſmoother when it has four ſtrands, becauſe the ſtrands are ſmaller: but it is more difficult to lay cloſe. When three cylindrical ſtrands are ſimply laid together, they leave a vacuity at the axis amounting to $\frac{1}{2\cdot8}$ of the ſection of a ſtrand. This is to be filled up by compreſſing the ſtrands by twiſting them. Each muſt fill up $\frac{1}{3}$ of it by changing its ſhape; and $\frac{1}{3}$ of this change is made on each ſide of the ſtrand. The greateſt change of ſhape therefore made on any one part of a ſtrand amounts only to $\frac{1}{7\cdot0\cdot8}$ of the ſection of the ſtrand. The vacuity between four cylinders is $\frac{1}{11}$ of one of them. This being divided into eight parts, is $\frac{1}{2\cdot9}$ of a ſtrand, and is the greateſt compreſſion which any part of it has to undergo. This is nearly five times greater than the former, and muſt be more difficult to produce. Indeed it may be ſeen by looking at the figures 11. and 12. that it will be eaſier to compreſs a ſtrand into the obtuſe angle of 120 degrees than into the right angle of 90; and without reaſoning more about the matter, it appears that the difficulty will increaſe with the number of ſtrands. Six ſtrands muſt touch each other, and form an arch leaving a hollow in the middle, into which one of the ſtrands will ſlip, and then the reſt will not completely ſurround it. Such a rope would be uneven on the ſurface. It would be weak; becauſe the central ſtrand would be ſlack in compariſon of the reſt, and would not be exerting its whole force when they are juſt ready to break. We ſee then that a four ſtrand rope muſt be more difficult to lay well than a hawſer-laid rope. With care, however, they may be laid well and cloſe, and are much uſed in the Britiſh navy.

16 And with a heart in the middle.

Ropes are made of four ſtrands, with a heart or ſtrand in the middle. This gives no additional ſtrength, for the reaſon juſt now given. Its only uſe is to make the work better and more eaſy, and to ſupport all the ſtrands at the ſame diſtance from the axis of the rope. This is of great conſequence; becauſe when they are at unequal diſtances from the axis, ſome muſt be more ſloping than others, and they will not reſiſt alike. This

lear-

[illegible] laid, and of a fize [illegible] to the [illegible] to this. When a rope of [illegible] a long time used and become unſerviceable, [illegible] the heart is always found cut and [illegible] very ſhort ſakum. This happens [illegible]: When the rope is violently ſtrained, it [illegible] greatly; becauſe the ſtrands ſurround the axis [illegible], and the ſtrain draws them into a poſition [illegible] to the axis. But the heart has not the [illegible] of parts, and cannot ſtretch ſo much; at the ſame time, its yarns are firmly graſped by the hard ſtrands which ſurround them; they muſt therefore be [illegible] ſhort pieces.

The proceſs from laying a rope with a heart is not very different from that already deſcribed. The top has a hole pierced through it, in the direction of the axis. The ſkain or ſtrand in ended for the heart paſſes through this hole, and is ſtretched along the walk. A boy attends it, holding it tight as it is taken into the laying rope. But a little attention to what has been ſaid will ſhow this method to be defective. The wick will have no more turns than the laid rope; and as it lies in the very axis, its yarns will be much ſtraighter than the ſtrands. Therefore when the rope is trained and ſtretched, the wick cannot ſtretch as much as the laid ſtrands; and being firmly graſped by them, it muſt break into ſhort pieces, and the ſtrands, having loſt their ſupport in thoſe places, will ſink in, and the cordage grow looſe. We ſhould endeavour to enable all to ſtretch alike. The wick therefore ſhould be twiſted in the ſame manner as the ſtrands, perhaps even a little more. It will thus communicate part of its ſtrength to the rope. Indeed it will not be ſo uniformly ſolid, and may chance to have three ſpiral vacuities. But that this does no harm, is quite evident from the ſuperior ſtrength of cable-laid cordage, to be deſcribed preſently, which have the ſame vacuities. In this way are the main and fore ſtays made for ſhips of the line. They are thought ſtronger than hawſer-laid ropes, but unfit for running rigging; becauſe their ſtrands are apt to get out of their places when the rope is drawn into loops. It is alſo thought that the heart retains water, rots, and communicates its putrefaction to the ſurrounding ſtrands.

Such is the general and eſſential proceſs of rope making. The fibres of hemp are twiſted into yarns, that they may make a line of any length, and ſtick among each other with a force equal to their own coheſion. The yarns are made into cords of permanent twiſt by laying them; and, that we may have a rope of any degree of ſtrength, many yarns are united in one ſtrand, for the ſame reaſon that many fibres were united in one yarn; and in the courſe of this proceſs it is in our power to give the rope a ſolidity and hardneſs which renders it leſs penetrable by water, which would rot it in a ſhort while. Some of theſe purpoſes are inconſiſtent with others: and the ſkill of a rope-maker lies in making the beſt compoſition; ſo that the rope may on the whole be the beſt in point of ſtrength, pliancy, and duration, that the quantity of hemp in it can produce.

18 Mode of making cable-laid cordage.

There is another ſpecies of cordage in very general uſe. A rope of two or more ſtrands may be uſed as a ſtrand, in order to compoſe a ſtill larger rope; and in this manner are cables and other ground tackle commonly made; for this reaſon ſuch cordage is called CABLE-LAID cordage. Rope-making.

The proceſs of cable-laying hardly differs from that of hawſer-laying. Three ropes, in their ſtate of permanent twiſt, may be twiſted together; but they will not hold it, like fine thread, becauſe they are ſtiff and elaſtic. They muſt therefore be treated like ſtrands for a hawſer. We muſt give them an *additional* twiſt, which will diſpoſe them to lay or cloſe themſelves; and this diſpoſition muſt be aided by the workmen at the ſledge. We ſay the twiſt ſhould be an addition to their twiſt as a rope. A twiſt in the oppoſite direction will indeed give them a diſpoſition to cloſe behind the top; but this will be very ſmall, and the ropes (now ſtrands) will be exceedingly open, and will become more open in laying. The twiſt is therefore given in the direction of their twiſt as a rope, or oppoſite to that of the primary ſtrands, of which the ropes are compoſed. Theſe primary ſtrands are therefore partly untwiſted in cable laying a rope, in the ſame manner as the yarns are untwiſted in the uſual proceſs of rope-making.

We need not inſiſt farther on this part of the manufacture. The reader muſt be ſenſible that the hawſers intended for ſtrands of a cable muſt not be ſo much twiſted as thoſe intended to remain hawſers; for the twiſt given to a finiſhed hawſer is preſumed to be that which renders it moſt perfect, and it muſt be injured by any addition. The preciſe proportion, and the diſtribution of the working up between the hardening of the ſtrands and cloſing the cable, is a ſubject about which the artiſts are no better agreed than in the caſe of hawſer-laid cordage. We did not enter on this ſubject while deſcribing the proceſs, becauſe the introduction of reaſonings and principles would have hurt the ſimplicity of the deſcription. The reader being now acquainted with the different parts of the manipulation, and knowing what can be done on any occaſion, will now be able to judge of the propriety of the whole, when he learns the principle on which the ſtrength of a rope depends.

19 Mode of eſtimating the ſtrength of ropes.

We have already ſaid, that a rope-yarn ſhould be twiſted till a fibre will break rather than be pulled out from among the reſt, and that all twiſting beyond this is injurious to the ſtrength of the yarn: And we advanced this maxim upon this plain conſideration, that it is needleſs to bind them cloſer together, for they will already break rather than come out; and becauſe this cloſer binding is produced only by forcibly wrapping the outer fibres round the inner, and drawing the outer ones tight. Thus theſe fibres are on the ſtretch, and are ſtrained as if a weight were hung on each of them. The proceſs of laying lines, of a permanent twiſt, ſhows that we muſt do a little more. We muſt give the yarn a degree of elaſtic contractility, which will make it lay itſelf and form a line or cord which will retain its twiſt. This muſt leave the fibres of the yarns in a ſtate of greater compreſſion than is neceſſary for juſt keeping them together. But more than this ſeems to be needleſs and hurtful. The ſame maxim muſt direct us in forming a rope conſiſting of ſtrands, containing more than one yarn. A needleſs exceſs of twiſt leaves them ſtrained, and leſs able to perform their office in the rope.

It not unfrequently happens, that the workman, in order to make his rope ſolid and firm, hardens up the

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the ſtrands till they really break: and we believe that, in the general practice of making large hawſers, many of the outer yarns in the ſtrands, eſpecially thoſe which chance to be outermoſt in the laid rope, and are therefore moſt ſtrained, are broken during the operation.

20 Effect of twiſting on the ſtrength of ropes, &c.

But there is another conſideration which ſhould alſo make us give no greater twiſt in any part of the operation than is abſolutely neceſſary for the firm coheſion of the parts, and this independent of the ſtrain to which the fibres or yarns are ſubjected. Twiſting cauſes all the fibres to lie obliquely with reſpect to the axis or general direction of the rope. It may juſt happen that one fibre or one yarn ſhall keep in the axis, and remain ſtraight; all the reſt muſt be oblique, and the more oblique as they are farther from the axis, and as they are more twiſted. Now it is to be demonſtrated, that when any ſtrain is given to the rope in the direction of its length, a ſtrain greater than this is actually excited on the oblique fibres, and ſo much the greater as they are more oblique; and thus the fibres which are already the weakeſt are expoſed to the greateſt ſtrains.

Let CF (fig. 13.) repreſent a fibre hanging from a hook, and loaded with a weight F, which it is juſt able to bear, but not more. This weight may repreſent the abſolute force of the fibre. Let ſuch another fibre be laid over the two pulleys A, B (fig. 14.), which are in a horizontal line AB, and let weights F and *f*, equal to the former, be hung on the ends of this fibre, while another weight R, leſs than the ſum of F and *f*, is hung on the middle point C by a hook or thread. This weight will draw down the fibre into ſuch a poſition ACB, that the three weights F, R, and *f*, are in equilibrio by the intervention of the fibre. We affirm that this weight R is the meaſure of the relative ſtrength of the fibre in relation to the form ACB; for the fibre is equally ſtretched in all its parts, and therefore in every part it is ſtrained by the force F. If therefore the weights F and *f* are held faſt, and any addition is made to the weight R, the fibre muſt break, being already ſtrained to its full ſtrength; therefore R meaſures its ſtrength in relation to its ſituation. Complete the parallelogram ACBD, and draw the diagonal CD; becauſe AB is horizontal, and AC = BC, DC is vertical, and coincides with the direction CR, by which the weight R acts. The point C is drawn by three forces, which are in equilibrio. They are therefore proportional to the ſides of a triangle, which have the ſame directions; or, the force acting in the direction CA is to that acting in the direction CR as CA to CD. The point R is ſupported by the two forces CA, CB, which are equivalent to CD; and therefore the weight F is to the weight R as CA is to CD. Therefore the abſolute ſtrengths of the two fibres AC, BC, taken ſeparately, are greater than their united ſtrengths in relation to their poſition with reſpect to CR: and ſince this proportion remains the ſame, whatever equal weights are hung on at F and *f*, it follows, that when any ſtrain DC is made to act on this fibre in the direction DC, it excites a greater ſtrain on the fibre, becauſe CA and CB taken together are greater than CD. Each fibre ſuſtains a ſtrain greater than the half of CD.

Now let the weight R be turned round the axis CR. This will cauſe the two parts of the fibre ACD to lap round each other, and compoſe a twiſted line or cord CR, as in fig. 15. and the parallelogram ACBD will remain of the ſame form, by the yielding of the weights F and *f*, as it is evident from the equilibrium of forces. The fibre will always aſſume that form which makes the ſides and diagonal in the proportion of the weights. While the fibres lap round each other, they are ſtrained to the ſame degree, that is, to the full extent of their ſtrength, and they remain in this degree of ſtrain in every part of the line or cord CR. If therefore each of the fibres has the ſtrength AB, the cord has the ſtrength DC; and if F and *f* be held faſt, the ſmalleſt addition to R will break the cord. The ſum of the abſolute ſtrength of the two fibres of which this thread is compoſed is to the ſum of their relative ſtrengths, or to the ſtrength of the thread, as AC+CB is to CD, or as AC is to EC.

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If the weights F and *f* are not held faſt, but allowed to yield, a heavier weight *r* may be hung on at C without breaking the fibre; for it will draw it into another poſition A *c* B, ſuch that *r* ſhall be in equilibrio with F and *f*. Since F and *f* remain the ſame, the fibre is as much ſtrained as before. Therefore make *c a*, *c b* equal to CA and CB, and complete the parallelogram *a c b d*. *c d* will now be a meaſure of the weight *r*, becauſe it is the equivalent of *c a* and *c b*. It is evident that *c d* is greater than CD, and therefore the thread formed by the lapping of the fibre in the poſition *a c b* is ſtronger than the former, in the proportion of *c d* to CD, or *c e* to CE. The cord is therefore ſo much ſtronger as the fibres are more parallel to the axis, and it muſt be ſtrongeſt of all when they are quite parallel. Bring the pulleys A, B cloſe to each other. It is plain that if we hang on a weight R leſs than the ſum of F and *f*, it cannot take down the bight of the fibre; but if equal to them, although it cannot pull it down, it will keep it down. In this caſe, when the fibres are parallel to each other, the ſtrength of the cord (improperly ſo called) is equal to the united abſolute ſtrengths of the fibres.

It is eaſy to ſee that the length of each of the fibres which compoſe any part CR of this cord is to the length of the part of the cord as AC to EC; and this is the caſe even although they ſhould lap round a cylinder of any diameter. This will appear very clearly to any perſon who conſiders the thing with attention. Let *a c* (fig. 16.) be an indefinitely ſmall portion of the fibre which is lapped obliquely round the cylinder, and let HKG be a ſection perpendicular to the axis. Draw *a e* parallel to the axis, and draw *e c* to the centre of the circle HKG, and *a' e'* parallel to *e c*. It is plain that *e'c* is the length of the axis correſponding to the ſmall portion *a c*, and that *e'c* is equal to *a e*.

Hence we derive another manner of expreſſing the ratio of the abſolute and relative ſtrength; and we may ſay that the abſolute ſtrength of a fibre, which has the ſame obliquity throughout, is to its relative ſtrength as the length of the fibre to the length of the cord of which it makes a part. And we may ſay, that the ſtrength of a rope is to the united abſolute ſtrength of its yarns as the length of the cord to the length of the yarns; for although the yarns are in various ſtates of obliquity, they contribute to the ſtrength of the cord in as much as they contribute immediately to the ſtrength of the ſtrands. The ſtrength of the yarns is to that of the ſtrands as the length of the yarns to that of the

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from it, and the ſtrength of the ſtrands is to that of the rope as the length of the firſt to that of the laſt.

And thus we ſee that twiſting the fibres diminiſhes the ſtrength of the aſſemblage; becauſe their obliquity, which is its neceſſary conſequence, enables any external force to excite a greater ſtrain on the fibres than it could have excited had they remained parallel; and ſince a greater degree of twiſting neceſſarily produces a greater obliquity of the fibres, it muſt more remarkably diminiſh the ſtrength of the cord. Moreover, ſince the greater obliquity cannot be produced without a greater ſtrain in the operation of twiſting, it follows, that immoderate twiſting is doubly prejudicial to the ſtrength of cordage.

21 Theoretical deductions confirmed by Reaumur's experiments.

Theſe theoretical deductions are abundantly confirmed by experiment; and as many perſons give their aſſent more readily to a general propoſition when preſented as an induction from unexceptionable particulars, than when offered as the conſequence of uncontroverted principles, we ſhall mention ſome of the experiments which have been made on this ſubject. Mr Reaumur, one of the moſt zealous, and at the ſame time judicious, obſervers of nature made the following experiments. (*Mem. Acad. Paris*, 1711.)

1. A thread, conſiſting of 832 fibres of ſilk, each of which carried at a medium 1 dram and 18 grains, would hardly ſupport 5½ pounds, and ſometimes broke with 5 pounds. The ſum of the abſolute ſtrengths of the fibres is 1040 drams, or upwards of 8 pounds 2 ounces.

2. A ſkain of white thread was examined in many places. Every part of it bore 9½ pounds, but none of it would bear 10. When twiſted ſlack into a cord of 2 yarns it broke with 16 pounds.

3. Three threads were twiſted together. Their mean ſtrength was very nearly 8 pounds. It broke with 17½, whereas it ſhould have carried 24.

4. Four threads were twiſted. Their mean ſtrength was 7½. It broke with 21½ inſtead of 30. Four threads, whoſe ſtrength was nearly 9 pounds, broke with 22 inſtead of 36.

5. A ſmall and very well made hempen cord broke in different places with 58, 63, 67, 72 pounds. Another part of it was untwiſted into its three ſtrands. One of them bore 29½, another 33½, and the third 35; therefore the ſum of their abſolute ſtrengths was 98. In another part which broke with 72, the ſtrands which had already borne this ſtrain were ſeparated. They bore 26, 28, and 30; the ſum of which is 84.

22 And by those of Sir C. Knowles

The late admiral Sir Charles Knowles made many experiments on cordage of ſize. A piece of rope 3½ inches in circumference was cut into many portions. Each of theſe had a fathom cut off, and it was carefully opened out. It was white, or untarred, and contained 72 yarns. They were each tried ſeparately, and their mean ſtrength was 90 pounds. Each correſponding piece of rope was tried apart, and the mean ſtrength of the nine pieces was 4552 pounds. But 90 times 72 is 6480.

23 Further remarks on twiſting.

Nothing is more familiarly known to a ſeaman than the ſuperior ſtrength of rope-yarns made up into a ſkain without twiſting. They call ſuch a piece of rope a SALVAGE. It is uſed on board the king's ſhips for rolling tackles, flinging the great guns, butt-ſlings, nippers for holding the viol on the cable, and in every ſervice where the utmoſt ſtrength and great pliancy are wanted.

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It is therefore ſufficiently eſtabliſhed, both by theory and obſervation, that the twiſting of cordage diminiſhes its ſtrength. Experiments cannot be made with ſufficient preciſion for determining whether this diminution is in the very proportion, relative to the obliquity of the fibres, which theory points out. In a hawſer the yarns lie in a great variety of angles with the axis. The very outermoſt yarn of a ſtrand is not much inclined to the axis of the rope: for the inclination of this yarn to the axis of its own ſtrand nearly compenſates for the inclination of the ſtrand. But then the oppoſite yarn of the ſame ſtrand, the yarn that is next the axis of the rope lies with an obliquity, which is the ſum of the obliquities of the ſtrand and of the yarn. So that all the yarns which are really in the axis of the rope are exceedingly oblique, and, in general, the inſide of the rope has its yarns more oblique than the outſide. But in a laid rope we ſhould not conſider the ſtrength as made up of the ſtrengths of the yarns; it is made up of the ſtrengths of the ſtrands: For when the rope is violently ſtretched, it untwiſts as a rope, and the ſtrands are a little more twiſted; ſo that they are reſiſting as ſtrands, and not as yarns. Indeed, when we conſider the proceſs of laying the rope, we ſee that it muſt be ſo. We know, from what has been already ſaid, that the three ſtrands would carry more when parallel than when twiſted into a rope, although the yarns would then be much more oblique to the axis. The chief attention therefore ſhould be turned to the making the moſt perfect ſtrands.

We are fully authoriſed to ſay that the twiſt given to cordage ſhould be as moderate as poſſible. We are certain that it diminiſhes the ſtrength, and that the appearance of ſtrength which its ſuperior ſmoothneſs and hardneſs gives is fallacious. But a certain degree of this is neceſſary for its duration. If the rope is laid too ſlack, its parts are apt to open when it happens to be catched in ſhort loops at its going into a pulley, &c. in which caſe ſome of the ſtrands or yarns are apt to kink and break. It alſo becomes too pervious to water, which ſoaks and rots it. To prevent theſe and other ſuch inconveniences, a conſiderable degree of firmneſs or hardneſs is neceſſary; and in order to give the cordage this appearance of ſuperior ſtrength, the manufacturer is diſpoſed to exceed.

24 Experiments of Du Hamel to aſcertain the beſt degree of twiſt, &c.

Mr Du Hamel made many experiments in the royal dock-yards in France, with a view to aſcertain what is the beſt degree of twiſt. It is uſual to work up the yarns to ⅓ of their length. Mr Du Hamel thought this too much, and procured ſome to be worked up only to ¼ of their length of the yarns. The ſtrength of the firſt, by a mean of three experiments, was 4321, and that of the laſt was 5187.

He cauſed three ropes to be made from the ſame hemp, ſpun with all poſſible equability, and in ſuch proportion of yarn that a fathom of each was of the ſame weight. The rope which was worked up to ⅓ bore 4098 pounds; that which was worked up to ¼ bore 4850; and the one worked up to ⅕ bore 6205. In another trial the ſtrengths were 4250, 6753, and 7397. Theſe ropes were of different ſizes.

He had influence enough, in conſequence of theſe experiments, to get a conſiderable quantity of rigging made

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made of yarns worked up only to $\frac{1}{4}$ of their length, and had them uſed during a whole campaign. The officers of the ſhips reported that this cordage was about $\frac{1}{4}$ lighter than the ordinary kind; nearly $\frac{1}{8}$ ſlenderer, ſo as to give leſs hold to the wind, was therefore more ſupple and pliant, and run eaſier through the blocks, and did not run into kinks; that it required fewer hands to work it, in the proportion of two to three; and that it was at leaſt $\frac{1}{4}$ ſtronger. And they ſaid that it did not appear to have ſuffered more by uſing than the ordinary cordage, and was fit for another campaign.

Mr Du Hamel alſo made experiments on other fabrics of cordage, which made all twiſting unneceſſary ſuch as ſimply laying the yarn in ſkains, and then covering it with a worming of ſmall line. This he found greatly ſuperior in ſtrength, but it had no duration, becauſe the covering opened in every ſhort bending, and was ſoon fretted off. He alſo covered them with a woven coat in the manner practiſed for houſe-furniture. But this could not be put on with ſufficient tightneſs, without an enormous expence, after the manner of a horſe-whip. Small ropes were woven ſolid, and were prodigiouſly ſtrong. But all theſe fabrics were found too ſoft and pervious to water, and were ſoon rendered unſerviceable. The ordinary proceſs of rope-making therefore muſt be adhered to; and we muſt endeavour to improve it by diminiſhing the twiſt as far as is compatible with the neceſſary ſolidity.

In purſuance of this principle, it is ſurely adviſable to lay ſlack all ſuch cordage as is uſed for ſtanding rigging, and is never expoſed to ſhort bendings. Shrouds, ſtays, backſtays, pendants, are in this ſituation, and can eaſily be defended from the water by tarring, ſerving, &c.

The ſame principle alſo directs us to make ſuch cordage of four ſtrands. When the ſtrands are equally hardened, and when the degree of twiſt given in the laying is preciſely that which is correſpondent to the twiſt of the ſtrands, it is demonſtrable that the ſtrands are lying leſs obliquely to the axis in the four-ſtrand cordage, and ſhould therefore exert greater force. And experience fully confirms this. Mr Du Hamel cauſed two very ſmall hawſers to be made, in which the ſtrands were equally hardened. One of them had three ſtrands, and the other ſix with a heart. They were worked up to the ſame degree. The firſt broke with 865 pounds, and the other with 1325. Several compariſons were made, with the ſame precautions, between cordage of three and of four ſtrands, and in them all the four-ſtrand cordage was found greatly ſuperior; and it appeared that a heart judiciouſly put in not only made the work eaſier and more perfect to the eye, but alſo increaſed the ſtrength of the cordage.

It is ſurely unreaſonable to refuſe credit to ſuch a uniform courſe of experiment, in which there is no motive for impoſition, and which is agreeable to every clear notion that we can form on this complicated ſubject; and it argues a conſiderable preſumption in the profeſſional artiſts to oppoſe the vague notions which they have of the matter to the calm reflections, and minute examination of every particular, by a man of good underſtanding, who had no intereſt in miſleading them.

The ſame principles will explain the ſuperiority of cable-laid cordage. The general aim in rope-making is to make every yarn bear an equal ſhare of the general ſtrain, and to put every yarn in a condition to bear it. But if this cannot be done, the next thing aimed at is, to put the yarns in ſuch ſituations that the ſtrains to which they are expoſed in the uſe of the rope may be proportioned to their ability to bear it. Even this point cannot be attained, and we muſt content ourſelves with an approach towards it.

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25 Superiority of cable-laid cordage, &c.

The greateſt difficulty is to place the yarns of a large ſtrand agreeably to thoſe maxims. Suppoſing them placed with perfect regularity round the yarn which is in the middle: they will lie in the circumferences of concentric circles. When this whole maſs is turned equally round this yarn as an axis, it is plain that they will all keep their places, and that the middle yarn is ſimply twiſted round its axis, while thoſe of the ſurrounding circles are lapped round it in ſpirals, and that theſe ſpirals are ſo much more oblique as the yarns are farther from the axis. Suppoſe the ſledge kept faſt, ſo that the ſtrand is not allowed to ſhorten. The yarns muſt all be ſtretched, and therefore ſtrained; and thoſe muſt be the moſt extended which are the fartheſt from the middle yarn. Now allow the ſledge to approach. The ſtrand contracts in its general length, and thoſe yarns contract moſt which were moſt extended. The remaining extenſion is therefore diminiſhed in all; but ſtill thoſe which are moſt remote from the middle are moſt extended, and therefore moſt ſtrained, and have the ſmalleſt remainder of their abſolute force. Unfortunately they are put into the moſt unfavourable ſituations, and thoſe which are already moſt ſtrained are left the moſt oblique, and have the greateſt ſtrain laid on them by any external force. But this is unavoidable: Their greateſt hurt is the ſtrains they ſuſtain in the manufacture. When the ſtrand is very large, as in a nine-inch hawſer, it is almoſt impoſſible to bring the whole to a proper firmneſs for laying without ſtraining the outer yarns to the utmoſt, and many of them are broken in the operation.

26 In laying large ropes the ſtrands are twiſted in a direction oppoſite to that of ſpinning, and are conſequently ſtronger.

The reader will remember that a two-ſtrand line was laid or cloſed merely by allowing it to twiſt itſelf up at the ſwivel of the loper; and that it was the elaſticity ariſing from the twiſt of the yarn which produced this effect: and he would probably be ſurpriſed when we ſaid, that, in laying a larger rope, the ſtrands are twiſted in a direction oppoſite to that of the ſpinning. Since the tendency to cloſe into a rope is nothing but the tendency of the ſtrands to untwiſt, it would ſeem natural to twiſt the ſtrands as the yarns were twiſted before. This would be true, if the elaſticity of the fibres in a yarn produced the ſame tendency to untwiſt in the ſtrand that it does in the yarn. But this is not the caſe. The contraction of one of the outer yarns of a ſtrand tends to pull the ſtrand backward round the axis of the ſtrand: but the contraction of a fibre of this yarn tends to turn the yarn round its own axis, and not round the axis of the ſtrand. It tends to untwiſt the yarn, but not to untwiſt the ſtrand. It tends to untwiſt the ſtrand only ſo far as it tends to contract the yarn. Let us ſuppoſe the yarn to be ſpun up to one-half the length of the fibres. The contracting power of this yarn will be only one-half of the force exerted by the fibres: therefore, whatever is the force neceſſary for cloſing the rope properly, the fibres of

[illegible] exerting twice this force. Now let the yarns [illegible] up to one-half, be made up in a ſtrand, and let the ſtrand be twiſted in the oppoſite direction to the ſpinning till it has acquired the ſame elaſticity fit for laying. The yarns are untwiſted. Suppoſe to three-fourths of the length of the fibres. They are now exerting only four-thirds of the force neceſſary for laying, that is, two-thirds of what they were obliged to exert in the other caſe; and thus we have ſtronger yarns when the ſtrands are equally ſtrained. But they require to be more ſtrained than the other; which, being made of more twiſted yarn, ſooner acquire the elaſticity fit for laying. But ſince the elaſticity which fits the ſtrand for laying does not increaſe ſo faſt as the ſtrain on the fibres of the yarn which produces it, it is plain, that when each has acquired that elaſticity which is proper for laying, the ſtrands made of the ſlack-twiſted yarn are the ſtrongeſt; and the yarns are alſo the ſtrongeſt; and being ſofter, the rope will cloſe better.

Experience confirms all this; and cordage, whoſe ſtrands are twiſted in the oppoſite direction to the twiſt of ſpinning, are found to be ſtronger than the others in a proportion not leſs than that of 7 to 6.

[illegible] and its defects when made, we have fallen on a method of making great cordage by laying it twice. A hawſer-laid rope, ſlack ſpun, little hardened in the ſtrands, and ſlack laid, is made a ſtrand of a large rope called a *cable* or *cabit*. The advantages of this fabric are evident. The ſtrands are reduced to one-third or one-fourth of the diameter which they would have in a hawſer of the ſame ſize. Such ſtrands cannot have their yarns lying very obliquely, and the outer yarns cannot be much more ſtrained than the inner ones. There muſt therefore be a much greater equality in the whole ſubſtance of cable-laid cordage, and from this we ſhould expect ſuperior ſtrength.

Accordingly, their ſuperiority is great, not leſs than in the proportion of 13 to 9, which is not far from the proportion of 4 to 3. A cable is more than a fourth part, but is not a third part, ſtronger than a hawſer of the ſame ſize or weight.

They are ſeldom made of more than three hawſers of three ſtrands each, though they are ſometimes made of three four-ſtranded hawſers, or of four three-ſtranded. The firſt of theſe two is preferred, becauſe four ſmall ſtrands can be laid very cloſe; whereas it is difficult to lay well four hawſers, already become very hard.

The ſuperiority of a cable-laid cordage being attributed entirely to the greater perfection of the ſtrands, and this being owing to the entirely from their [illegible], it was natural to expect ſtill better cordage by laying cables of ſtrands of ſtill larger ſize. It has been tried, and with every requiſite attention. But although they have always equalled, they have not decidedly excelled, common cables of the ſame weight; and they require a great deal more work. We ſhall not therefore enter upon the manipulations of this fabric.

There is only one point of the mechanical proceſs of rope-making which we have not conſidered minutely; and it is an important one, viz. the diſtribution of the total ſhortening of the yarns between the hardening of the ſtrands and the laying the rope. This is a point about which the artiſts are by no means agreed. There is certainly a poſition of the ſtrands of a laid rope which puts every part in equilibrio; and this is what an elaſtic, but perfectly ſoft rope (were ſuch a thing poſſible), would aſſume. But this cannot be diſcovered by any experiments made on large or even on firm cordage; and it may not be thought ſufficiently clear that the proportion which would be diſcovered by the careful fabrication of a very ſmall and ſoft line is the ſame that will ſuit a cordage of any diameter. We muſt proceed much on conjecture; and we cannot ſay that the arguments uſed by the partizans of different proportions are very convincing.

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28 Diſtribution of the total ſhortening of the yarns between the hardening of the ſtrands and laying the rope.

The general practice, we believe, is to divide the whole of the intended ſhortening of the yarns, or the working up into three parts, and to employ two of theſe in hardening the ſtrands, and the remaining third in cloſing the hawſer.

29 Opinion and experiments of Du Hamel.

Mr Du Hamel thinks, that this repartition is injudicious, and that the yarns are too much ſtrained, and the ſtrands rendered weak. He recommends to invert this proportion, and to ſhorten one-third in the hardening of the ſtrands, and two-thirds in laying the hawſer. But if the ſtrain of the yarns only is conſidered, one ſhould think that the outſide yarn of a ſtrand will be more ſtrained in laying, in proportion to the yarn of the ſame ſtrand, that is, in the very axis of the rope. We can only ſay, that if a very ſoft line is formed in this way, it will not keep its twiſt. This ſhows that the turns in laying were more than what the elaſticity or hardening of the ſtrands required. The experiments made on ſoft lines always ſhowed a tendency to take a greater twiſt when the lines were made in the firſt manner, and a tendency to loſe their twiſt when made in Mr Du Hamel's manner. We imagine that the true proportion is between theſe two extremes, and that we ſhall not err greatly if we halve the total ſhortening between the two parts of the proceſs. If working up to two-thirds be inſiſted upon, and if it be really too much, Mr Du Hamel's repartition may be better, becauſe part of this working will quickly go off when the cordage is uſed. But it is ſurely better to be right in the main point, the total working up, and then to adjuſt the diſtribution of it ſo that the finiſhed cordage ſhall preciſely keep the form we have given to it.

There muſt be the ſame uncertainty in the quadruple diſtribution of the working up a cable. When a cable has its yarns ſhortened to two-thirds, we believe the ordinary practice has been, 1ſt, To warp 180 fathoms; 2d, To harden up the ſtrands 30 fathoms; 3d, To lay or cloſe up 13 fathoms; 4th, To work up the hawſers nine fathoms; 5th, To cloſe up eight fathoms. This leaves a cable of 120. Since Mr Du Hamel's experiments have had an influence at Rochefort, the practice has been to warp 190, to harden up 38, to lay up 12, to work up the hawſers 10, and then to cloſe up ſix; and when the cable is finiſhed, to ſhorten it two fathoms more, which our workmen call *throwing the turn well up*. This leaves a cable of 122 fathoms.

As there ſeems little doubt of the ſuperiority of cordage ſhortened one-fourth over cordage ſhortened one-third, the following diſtribution may be adopted: warp

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190 fathoms, harden up 12, lay up 11, work up the hawſers 12, and cloſe up 12 more, which will leave a cable of 143.

30 Of the ſtrains made uſe of during the operation.

There is another queſtion about which the artiſts are divided in their opinions, viz. the ſtrains made uſe of during the operation. This is produced by the weight laid on the ſledge. If this be too ſmall, the ſtrands will not be ſufficiently tightened, and will run into kinks. The ſledge will keep up by ſtarts; and a ſmall inequality of twiſt in the ſtrands will throw it aſkew. The top will not run well without a conſiderable preſſure to throw it from the cloſing point, and therefore the cordage will neither cloſe fairly nor firmly; on the other hand, it is evident, that the ſtrain on the ſtrands is a complete expenditure of ſo much of their force, and it may be ſo great as to break them. Theſe are the extreme poſitions. And we think that it may be fairly deduced from our principles, that as great a ſtrain ſhould be laid on the ſtrands as will make good work, that is, as will enable the rope to cloſe nearly and completely, but no more. But can any general rule be given for this purpoſe?

The practice at Rochefort was to load the ſledge till its weight and load were double the weight of the yarns when it warped 180 fathoms. A ſix-inch hawſer will require about a ton. If we ſuppoſe the friction one-third of the weight; the ſtrain on each ſtrand will be about two hundred and a quarter weight. Mr Du Hamel thinks this too great a load, and propoſes to put only five-fourths or three-ſeconds of the weight of the cordage; and ſtill leſs if a ſhorter piece be warped, becauſe it does not require ſo much force to throw the twiſt from the two cranks to the middle of the ſtrand. We ſhall only ſay, that ſtronger ropes are made by heavy loading the carriage, and working up moderately, than by greater ſhortening, and a lighter load; but all this is very vague.

31 General rule for computing the ſtrength of cordage.

The reader will naturally aſk, after this account of the manufacture, what is the general rule for computing the ſtrength of cordage? It cannot be expected to be very preciſe. But if ropes are made in a manner perfectly ſimilar, we ſhould expect the ſtrength to be in proportion to the area of their ſection; that is, to the ſquare of their diameters or circumferences, or to the number of equal threads contained in them.

Nor does it deviate far from this rule; yet Mr Du Hamel ſhows, from a range of experiments made on all cordage of $3\frac{1}{2}$ inch circumference and under, that the ſtrength increaſes a little faſter than the number of equal threads. Thus he found that ropes of

9 threads bore	1014 pounds, inſtead of	946
12	1564	1262
18	2148	1893

We cannot pretend to account for this. We muſt alſo obſerve, that the ſtrength of cordage is greatly improved by making them of yarn ſpun fine. This requires finely dreſſed hemp; and being more ſupple, the fibres lie cloſe, and do not form ſuch oblique ſpirals. But all hemp will not ſpin equally fine. Every ſtalk ſeems to conſiſt of a certain number of principal fibres, which ſplit more eaſily into a ſecond ſet, and theſe more difficultly into a third ſet, and ſo on. The ultimate fineneſs, therefore, which a reaſonable degree of dreſſing can give to hemp, bears ſome proportion, not indeed very preciſe, to the ſize of the ſtalk. The Britiſh and Dutch uſe the beſt hemp, ſpin their yarn the fineſt, and their cordage is conſiderably ſtronger than the French, much of which is made of their own hemp, and others of a coarſe and harſh quality.

Rope-making.

The following rule for judging of the weight which a rope will bear is not far from the truth. It ſuppoſes them rather too ſtrong; but it is ſo eaſily remembered that it may be of uſe.

Multiply the circumference in inches by itſelf, and take the fifth part of the product, it will expreſs the tons which the rope will carry. Thus, if the rope have 6 inches circumference, 6 times 6 is 36, the fifth of which is $7\frac{1}{5}$ tons; apply this to the rope of $3\frac{1}{2}$, on which Sir Charles Knowles made the experiments formerly mentioned, $3\frac{1}{2} \times 3\frac{1}{2} = 10{,}25$, $\frac{1}{5}$ of which is 2,05 tons, or 4592 pounds. It broke with 4550.

32 Of tarring and its effects on the ſtrength of ropes.

This may ſuffice for an account of the mechanical part of the manufacture. But we have taken no notice of the operation of tarring; and our reaſon was, that the methods practiſed in different rope-works are ſo exceedingly different, that we could hardly enumerate them, or even give a general account of them. It is evidently proper to tar in the ſtate of twine or yarn, this being the only way that the hemp could be uniformly penetrated. The yarn is made to wind off one reel, and having paſſed through a veſſel containing hot tar, it is wound up on another reel; and the ſuperfluous tar is taken off by paſſing through a hole ſurrounded with ſpongy oakum; or it is tarred in ſkains or hauls, which are drawn by a capſtern through the tar-kettle, and through a hole formed of two plates of metal, held together by a lever loaded with a weight.

It is eſtabliſhed beyond a doubt, that tarred cordage when new is weaker than white, and that the difference increaſes by keeping. The following experiments were made by Mr Du Hamel at Rochefort on cordage of three inches (French) in circumference, made of the beſt Riga hemp.

Auguſt 8. 1741.

	White.	*Tarred.*
Broke with	4500 pounds.	3400 pounds.
	4900	3300
	4800	3250
	April 25. 1743.	
	4600	3500
	5000	3400
	5000	3400
	September 3. 1746.	
	3800	3000
	4000	2700
	4200	2800

A parcel of white and tarred cordage was taken out of a quantity which had been made February 12. 1746. It was laid up in the magazines, and comparisons were made from time to time as follows:

	White bore.	*Tarred bore.*	*Differ.*
1746 April 14.	2645 pounds.	2312 pounds.	333
1747 May 18.	2762	2155	607
1747 Oct. 21.	2710	2050	660
1748 June 19.	2575	1752	823
1748 Oct. 2.	2425	1837	588
1749 Sep. 25.	2917	1865	1052

Mr

Rope-Dancer

Mr Du Hamel ſays, that it is decided by experience, 1. That white cordage in continual ſervice is more durable than tarred. 2. That it retains its ſtrength much longer when kept in ſtores. 3. That it reſiſts the deſtructive injuries of the weather one-fourth longer.

We muſt add to this one remarkable fact. In 1758 the ſhrouds and ſtays of the Sheer hulk at Portſmouth dockyard were overhawled, and when the worming and ſervice were taken off, they were found to be of white cordage. On examining the ſtorekeeper's books, they were found to have been formerly the ſhrowds and rigging of the Royal William, of 110 guns, built in 1715, and launched in 1716. She was thought top-heavy and unfit for ſea, and unrigged and her ſtores laid up. Some few years afterwards, her ſhrowds and ſtays were fitted on the Sheer hulk, where they remained in conſtant and very hard ſervice for about 30 years, while every tarred rope about her had been repeatedly renewed. This information we received from Mr Brown, boatſwain of the Royal William during the war 1758, &c.

Why then do we tar cordage? We thus render it more unpliant, weaker, and leſs durable. It is chiefly ſerviceable for cables and ground tackle, which muſt be continually wetted and even ſoaked. The reſult of careful obſervation is, 1. That white cordage, expoſed to be alternately very wet and dry, is weaker than tarred cordage. 2. That cordage which is ſuperficially tarred is conſtantly ſtronger than what is tarred throughout, and it reſiſts better the alternatives of wet and dry. *N. B.* The ſhrouds of the Sheer hulk were well tarred and blacked, ſo that it was not known that they were of white cordage.

Tar is a curious ſubſtance, miſcible completely with water. Attempts were made to anoint cordage with oils and fats which do not mix with water. This was expected to defend them from its pernicious effects. But it was diſtinctly found that theſe matters made the fibres of hemp glide ſo eaſily on each other, that it was hardly poſſible to twiſt them permanently. Before they graſped each other ſo hard that they could not be drawn, they were ſtrained almoſt to breaking.

33 Effect of tanning.

Attempts have been made to increaſe the ſtrength of cordage by tanning. But although it remains a conſtant practice in the manufacture of nets, it does not appear that much addition, either of ſtrength or durability, can be given to cordage by this means. The trial has been made with great care, and by perſons fully able to conduct the proceſs with propriety. But it is found that the yarns take ſo long time in drying, and are ſo much hurt by drying ſlowly, that the room required for a conſiderable rope-work would be immenſe; and the improvement of the cordage is but trifling, and even equivocal. Indeed tanning is a chemical proceſs, and its effect depends entirely on the nature of the materials to which the tan is applied. It unqueſtionably condenſes, and even ſtrengthens, the fibre of leather: but for any thing that we know *à priori*, it may deſtroy the coheſion of hemp and flax; and experiment alone could decide the queſtion. The reſult has been unfavourable; but it does not follow from this that a tan cannot be found which ſhall produce on the texture of vegetables effects ſimilar to what oak-bark and other aſtringents produce on the animal fibre or membrane. It is well known that ſome dyes increaſe the ſtrength of flax and cotton, notwithſtanding the corroſion which we know to be produced by ſome of the ingredients. This is a ſubject highly worth the attention of the chemiſt and the patriot.

Rope-Dancer || Roſe.

Rope Dancer. See *Rope* DANCER.

Rope-Yarn, among tailors, is the yarn of any rope untwiſted, but commonly made up of junk; its uſe is to make ſinnet, matts, &c.

ROQUET. See ROCKET.

RORIDULA, in botany: A genus of the monogynia order, belonging to the pentandria claſs of plants. The corolla is pentapetalous; the calyx pentaphyllous; the capſule trivalved; the antheræ ſcrotiform at the baſe.

ROSA, the ROSE: A genus of the polygamia order belonging to the icoſandria claſs of plants; and in the natural method ranking under the 35th order, *Senticoſæ*. There are five petals; the calyx is urceolated, quinquefid, corneous, and ſtraightened at the neck. The ſeeds are numerous, hiſpid, and affixed to the inſide of the calyx.

The ſorts of roſes are very numerous; and the botaniſts find it very difficult to determine with accuracy which are ſpecies and which are varieties, as well as which are varieties of the reſpective ſpecies. On this account Linnæus, and ſome other eminent authors, are inclined to think that there is only one real ſpecies of roſe, which is the *roſa canina*, or "dog-roſe of the hedges," &c. and that all the other ſorts are accidental varieties of it. However, according to the preſent Linnæan arrangement, they ſtand divided into 14 ſuppoſed ſpecies, each comprehending varieties, which in ſome ſorts are but few, in others numerous.

The ſuppoſed ſpecies and their varieties, according to the arrangement of modern botaniſts, are as follow:

1. The canina, canine roſe, wild dog-roſe of the hedges, or hep-tree, grows five or ſix feet high, having prickly-ſtalks and branches, pinnated, five or ſeven-lobed leaves, with aculeated foot ſtalks, ſmooth pedunculi, oval ſmooth germina, and ſmall ſingle flowers. There are two varieties, red-flowered and white-flowered. They grow wild in hedges abundantly all over Britain; and are ſometimes admitted into gardens, a few to increaſe the variety of the ſhrubbery collection.

2. The alba, or common white-roſe, grows five or ſix feet high, having a green ſtem and branches, armed with prickles, hiſpid pedunculi, oval ſmooth germina, and large white flowers. The varieties are,—large double white roſe—dwarf ſingle white roſe—maidens-bluſh white roſe, being large, produced in cluſters, and of a white and bluſh-red colour.

3. The Gallica, or Gallican roſe, &c. grows from about three or four to eight or ten feet high, in different varieties; with pinnated, three, five, or ſeven-lobed leaves, and large red and other coloured flowers in different ſorts. This ſpecies is very extenſive in ſuppoſed varieties, bearing the above ſpecific diſtinction, ſeveral of which have been formerly conſidered as diſtinct ſpecies, but are now ranged among the varieties of the Gallican roſe, conſiſting of the following noted varieties.

Common red officinal roſe, grows erect, about three or four feet high, having ſmall branches, with but few prickles, and large ſpreading half-double deep-red flowers.

Fig. 1.

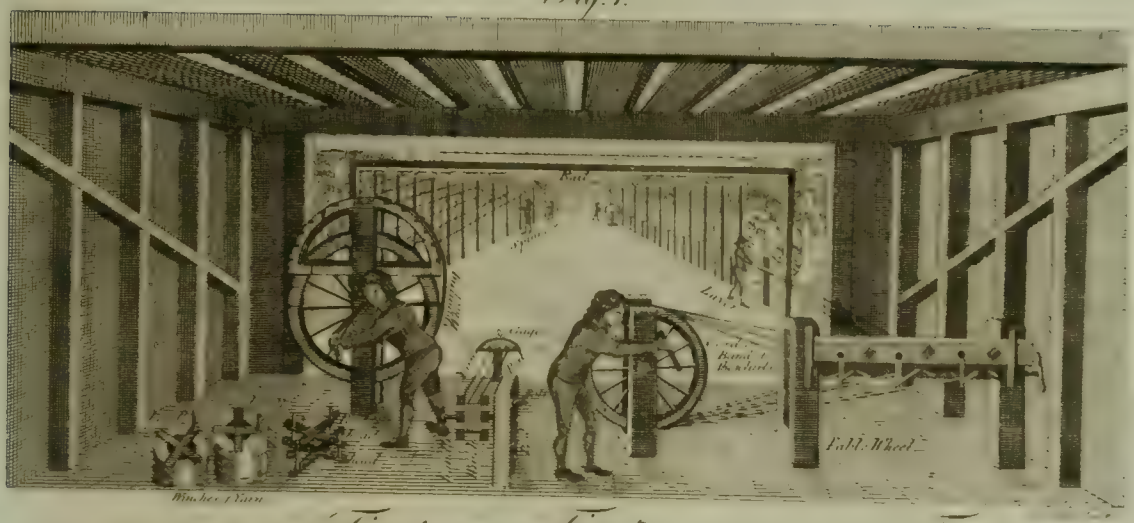


Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

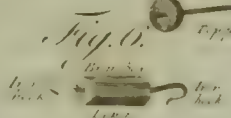


Fig. 7.

Fig. 8.

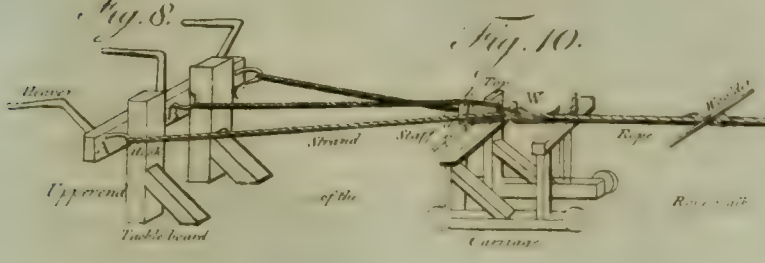


Fig. 9.

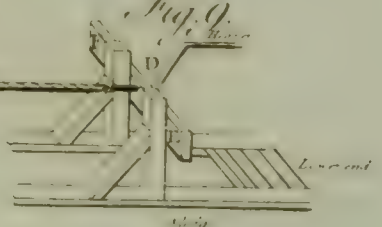


Fig. 10.

Fig. 11.

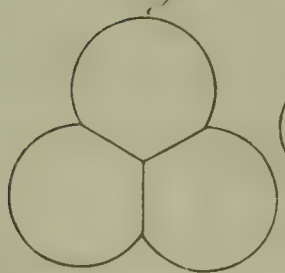


Fig. 12.

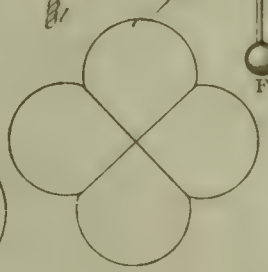


Fig. 13.

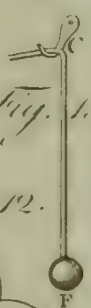


Fig. 14.

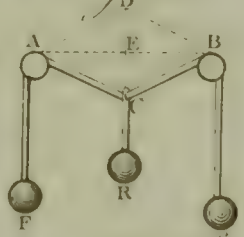


Fig. 15.

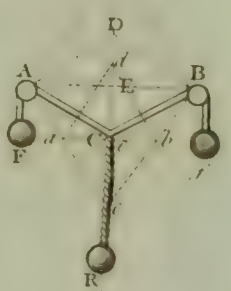
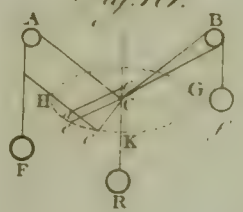


Fig. 16.



Roſa. flowers.—Roſa mundi (roſe of the world) or ſtriped red roſe, is a variety of the common red roſe, growing but three or four feet high, having large ſpreading ſemi-double red flowers, beautifully ſtriped with white—and deep red.—York and Lancaſter variegated roſe, grows five, ſix, or eight feet high, or more; bearing variegated red flowers, conſiſting of a mixture of red and white; alſo frequently diſpoſed in elegant ſtripes, ſometimes in half of the flower, and ſometimes in ſome of the petals.—Monthly roſe, grows about four or five feet high, with green very prickly ſhoots; producing middle-ſized, moderately-double, delicate flowers, of different colours in the varieties. The varieties are, common red-flowered monthly roſe—bluſh-flowered—white-flowered—ſtriped-flowered. All of which blow both early and late, and often produce flowers ſeveral months in the year, as May, June, and July; and frequently again in Auguſt or September, and ſometimes, in fine mild ſeaſons, continues till November or December: hence the name *monthly roſe*.—Double virgin-roſe, grows five or ſix feet high, having greeniſh branches with ſcarce any ſpines; and with large double pale-red and very fragrant flowers.—Red damaſk roſe, grows eight or ten feet high, having greeniſh branches, armed with ſhort aculea; and moderately-double, fine ſoft-red, very fragrant flowers.—White damaſk roſe, grows eight or ten feet high, with greeniſh very prickly branches, and whitiſh-red flowers, becoming gradually of a whiter colour.—Bluſh Belgic roſe, grows three or four feet high, or more; having greeniſh prickly branches, five or ſeven lobed leaves, and numerous, very double, bluſh-red flowers, with ſhort petals, evenly arranged.—Red Belgic roſe, having greeniſh and red ſhoots and leaves, and fine double deep-red flowers.—Velvet roſe, grows three or four feet high, armed with but few prickles; producing large velvet-red flowers, compriſing ſemi-double and double varieties, all very beautiful roſes.—Marbled roſe, grows four or five feet high, having browniſh branches, with but few prickles; and large, double, finely-marbled, red flowers.—Red-and-yellow Auſtrian roſe, grows five or ſix feet high, having ſlender reddiſh-branches, armed with ſhort browniſh aculea; and with flowers of a reddiſh copper colour on one ſide, the other ſide yellow. This is a curious variety, and the flowers aſſume a ſingularly agreeable appearance.—Yellow Auſtrian roſe, grows five or ſix feet high, having reddiſh very prickly ſhoots; and numerous bright-yellow flowers.—Double yellow roſe, grows ſix or ſeven feet high; with browniſh branches, armed with numerous large and ſmall yellowiſh prickles; and large very double yellow flowers.—Frankfort roſe, grows eight or ten feet high, is a vigorous ſhooter, with browniſh branches thinly armed with ſtrong prickles; and produces largiſh double purpliſh-red flowers, that blow irregularly, and have but little fragrance.

4. The centifolia, or hundred-leaved red roſe, &c. grows from about three or four to ſix or eight feet high, in different ſorts, all of them hiſpid and prickly; pinnated three and five lobed leaves; and large very double red flowers, having very numerous petals, and of different ſhades in the varieties. The varieties are,—common Dutch hundred-leaved roſe, grows three or four feet high, with erect greeniſh branches, but moderately armed with prickles; and large remarkably double red flowers, with ſhort regularly arranged petals.—Bluſh hundred leaved roſe, grows like the other, with large very double pale-red flowers.—Provence roſe, Roſa. grows five or ſix feet, with greeniſh-brown prickly branches, and very large double globular red flowers, with large petals folding over one another, more or leſs in the varieties.—The varieties are, common red Provence roſe, and pale Provence roſe; both of which having larger and ſomewhat looſer petals than the following ſort.—Cabbage Provence roſe; having the petals cloſely folded over one another like cabbages—Dutch cabbage roſe, very large, and cabbages tolerably.—Childing Provence roſe—Great royal roſe, grows ſix or eight feet high, producing remarkably large, ſomewhat looſe, but very elegant flowers.—All theſe are large double red flowers, ſomewhat globular at firſt blowing, becoming gradually a little ſpreading at top, and are all very ornamental fragrant roſes.—Moſs Provence roſe, ſuppoſed a variety of the common roſe; grows erectly four or five feet high, having browniſh ſtalks and branches, very cloſely armed with ſhort prickles, and double crimſon-red flowers; having the calyx and upper part of the peduncle ſurrounded with a rough moſſy-like ſubſtance, effecting a curious ſingularity. This is a fine delicate roſe, of a high fragrance, which, together with its moſſy calyx, renders it of great eſtimation as a curioſity.

5. The cinnamomea, or cinnamon roſe, grows five or ſix feet high, or more, with purpliſh branches thinly aculeated; pinnated five or ſeven lobed leaves, having almoſt inermous petioles, ſmooth pedunculi, and ſmooth globular germina; with ſmall purpliſh-red cinnamon-ſcented flowers early in May. There are varieties with double flowers.

6. The Alpina, or Alpine inermous roſe, grows five or ſix feet high, having ſmooth or unarmed reddiſh branches, pinnated ſeven-lobed ſmooth leaves, ſomewhat hiſpid pedunculi, oval germina, and deep-red ſingle flowers; appearing in May. This ſpecies, as being free from all kind of armature common to the other ſorts of roſes, is eſteemed as a ſingularity; and from this property is often called the *virgin roſe*.

7. The Carolina, or Carolina and Virginia roſe, &c. grows ſix or eight feet high, or more, having ſmooth reddiſh branches, very thinly aculeated; pinnated ſeven-lobed ſmooth leaves, with prickly foot-ſtalks; ſomewhat hiſpid pedunculi, globoſe hiſpid germen, and ſingle red flowers in cluſters, appearing moſtly in Auguſt and September. The varieties are, dwarf Pennſylvania roſe, with ſingle and double red flowers—American pale-red roſe. This ſpecies and varieties grow naturally in different parts of North America; they effect a fine variety in our gardens, and are in eſtimation for their late-flowering property, as they often continue in blow from Auguſt until October; and the flowers are ſucceeded by numerous red berry-like heps in autumn, cauſing a variety all winter.

8. The villoſa, or villoſe apple-bearing roſe, grows ſix or eight feet high, having ſtrong erect browniſh ſmooth branches; aculeated ſparſedly pinnated ſeven-lobed villoſe or hairy leaves, downy underneath, with prickly foot-ſtalks, hiſpid peduncles, a globular prickly germen; and large ſingle red flowers, ſucceeded by large round prickly heps, as big as little apples. This ſpecies merits admittance into every collection as a curioſity for the ſingularity of its fruit, both for variety

and

and ſoft, for it having a thick pulp of an agreeable ſubacid taſte, is often made into a tolerable good ſweetmeat.

9. The pimpinellifolia, or parſley-leaved roſe, grows about a yard high, armated ſparingly: much beſet with ſmall even-lobed leaves, having ſhort ſtalks and ſmall prickles, ſmooth peduncles, and globular ſmooth germina, and ſmall ſingle flowers. There are varieties with red flowers—and with white flowers. They grow wild in England, &c. and are cultivated in ſhrubberies for variety.

10. The ſpinoſiſſima, or moſt ſpinous, dwarf burnet-leaved roſe, commonly called *Scotch roſe*, grows but two or three feet high, very cloſely armed with ſpines; ſmall ſmoothly pinnated ſeven-lobed leaves, with prickly foot-ſtalks, prickly pedunculi, oval ſmooth germen, and numerous ſmall ſingle flowers, ſucceeded by round dark-purple hips. The varieties are, common white flowered—red flowered—ſtriped-flowered—marble-flowered. They grow naturally in England, Scotland, &c. The firſt variety rites near a yard high, the others but one or two feet, all of which are ſingle-flowered; but the flowers being numerous all over the branches, make a pretty appearance in the collection.

11. The eglanteria, eglantine roſe, or ſweet briar, grows five or ſix feet high, having green branches, armed with ſtrong ſpines ſparſedly; pinnated ſeven-lobed odoriferous leaves, with acute folioles and rough foot-ſtalks, ſmooth pedunculi, globular ſmooth germina, and ſmall pale-red flowers. The varieties are, common ſingle-flowered—ſemi-double flowered—double-flowered—double double-flowered—yellow-flowered. This ſpecies grows naturally in ſome parts of England, and in Switzerland. It claims culture in every garden for the odoriferous property of its leaves; and ſhould be planted in the borders, and other compartments contiguous to walks, or near the habitation, where the plants will impart their refreſhing fragrance very profuſely all around; and the young branches are excellent for improving the odour of roſe-gays and bow-pots.

12. The moſchata, or muſk-roſe, ſuppoſed to be a variety only of the ever-green muſk-roſe, hath weak ſmooth green ſtalks and branches, riſing by ſupport from ſix to eight or ten feet high or more, thinly armed with ſtrong ſpines; pinnated ſeven-lobed ſmooth leaves, with prickly foot-ſtalks; hiſpid peduncles; oval hiſpid germen; and all the branches terminated by large umbellate cluſters of pure-white muſk-ſcented flowers in Auguſt, &c.

13. The ſempervirens, or ever-green muſk-roſe, hath a ſomewhat trailing ſtalk and branches, riſing by ſupport five or ſix feet high or more, having a ſmooth bark armed with prickles; pinnated five-lobed ſmooth ſhining evergreen leaves, with prickly petioles, hiſpid pedunculi, oval hiſpid germen; and all the branches terminated by cluſters of pure-white flowers of a muſky fragrance; appearing the end of July, and in Auguſt. The ſempervirent property of this elegant ſpecies renders it a curioſity among the roſy tribe; it alſo makes a fine appearance as a flowering ſhrub. There is one variety, the deciduous muſk-roſe abovementioned. This ſpecies and variety flower in Auguſt, and is remarkable for producing them numerouſly in cluſters, continuing in ſucceſſion till October or November.

The above 13 ſpecies of roſa, and their reſpective varieties, are of the ſhrub kind; all deciduous, except the laſt ſort, and of hardy growth, ſucceeding in any common ſoil and ſituation, and flowering annually in great abundance from May till October, in different ſorts; though the general flowering ſeaſon for the principal part of them is June and July: but in a full collection of the different ſpecies, the blow is continued in conſtant ſucceſſion ſeveral months, even ſometimes from May till near Chriſtmas; producing their flowers univerſally on the ſame year's ſhoots, riſing from thoſe the year before, generally on long pedunculi, each terminated by one or more roſes, which in their characteriſtic ſtate conſiſt each of five large petals and many ſtamina; but in the doubles, the petals are very numerous; and in ſome ſorts, the flowers are ſucceeded by fruit ripening to a red colour in autumn and winter, from the ſeed of which the plants may be raiſed: but the moſt certain and eligible mode of propagating moſt of the ſorts is by ſuckers and layers; and by which methods they may be increaſed very expeditiouſly in great abundance. Roſa.

The white and red roſes are uſed in medicine. The former diſtilled with water yields a ſmall portion of a butyraceous oil, whoſe flavour exactly reſembles that of the roſes themſelves. This oil and the diſtilled water are very uſeful and agreeable cordials. Theſe roſes alſo, beſides the cordial and aromatic virtues which reſide in their volatile parts, have a mild purgative one, which remains entire in the decoction left after diſtillation. The red roſe, on the contrary, has an aſtringent and gratefully corroborating virtue.

ROSA (Salvator), an admirable painter, born at Naples in 1614. He was firſt inſtructed by Franceſco Francazano, a Flemiſh man: but the death of his father reduced him to ſell drawings ſketched upon paper for any thing he could get; one of which happening to fall into the hands of Lanfranc, he took him under his protection, and enabled him to enter the ſchool of Spagnoletto, and to be taught moreover by Daniel Falcone, a diſtinguiſhed painter of battles at Naples. Salvator had a fertile imagination. He ſtudied nature with attention and judgment; and always repreſented her to the greateſt advantage: for every tree, rock, cloud, or ſituation, that enters into his compoſition, ſhows an elevation of thought that extorts admiration. He was equally eminent for painting battles, animals, ſea or land ſtorms; and he executed theſe different ſubjects in ſuch taſte as renders his works readily diſtinguiſhable from all others. His pieces are exceedingly ſcarce and valuable; one of the moſt capital is that repreſenting Saul and the witch of Endor, which was preſerved at Verſailles. He died in 1673; and as his paintings are in few hands, he is more generally known by his prints; of which he etched a great number. He painted landſcapes more than hiſtory; but his prints are chiefly hiſtorical. The capital landſcape of this maſter at Chiſwick is a noble picture. However, he is ſaid to have been ignorant of the management of light, and to have ſometimes ſhaded faces in a diſagreeable manner. He was however a man of undoubted genius; of which he has given frequent ſpecimens in his works. A roving diſpoſition, to which he is ſaid to have given full ſcope, ſeems to have added a wildneſs to all his thoughts. We are told that he ſpent the early part of his life in a troop of banditti; and that the rocky deſolate ſcenes

Roſacea || Roſamond.

in which he was accuſtomed to take refuge, furniſhed him with thoſe romantic ideas in landſcape, of which he is ſo exceedingly fond, and in the deſcription of which he ſo greatly excels. His *robbers*, as his detached figures are commonly called, are ſuppoſed alſo to have been taken from the life.

Salvator Roſa is ſufficiently known as a painter; but until now we never heard of him as a muſician. Among the muſical manuſcripts purchaſed at Rome by Dr Burney, was a muſic book of Salvator, in which are many airs and cantatas of different maſters, and eight entire cantatas, written, ſet, and tranſcribed by this celebrated painter himſelf. From the ſpecimen of his talents for muſic here given, we make no ſcruple of declaring, that he had a truer genius for this ſcience, in point of melody, than any of his predeceſſors or cotemporaries: there is alſo a ſtrength of expreſſion in his verſes, which ſets him far above the middle rank as a poet. Like moſt other artiſts of real original merit, he complains of the ill uſage of the world, and the difficulty he finds in procuring a bare ſubſiſtence.

ROSACEA. See *Gutta Roſacea*.

ROSACEOUS, among botaniſts, an appellation given to ſuch flowers as are compoſed of ſeveral petals or leaves diſpoſed in a ſort of circular form, like thoſe of a roſe.

ROSAMOND, daughter of Walter Lord Clifford, was a young lady of exquiſite beauty, fine accompliſhments, and bleſt with a moſt engaging wit and ſweetneſs of temper. She had been educated, according to the cuſtom of the times, in the nunnery of Godſtow; and the popular ſtory of her is as follows: Henry II. ſaw her, loved her, declared his paſſion, and triumphed over her honour. To avoid the jealouſy of his queen Elinor, he kept her in a wonderful labyrinth at Woodſtock, and by his connection with her had William Longſword earl of Saliſbury, and Geoffroy biſhop of Lincoln. On Henry's abſence in France, however, on account of a rebellion in that country, the queen found means to diſcover her, and though ſtruck with her beauty, ſhe recalled ſufficient reſentment to poiſon her. The queen, it is ſaid, diſcovered her apartment by a thread of ſilk; but how ſhe came by it is differently related. This popular ſtory is not however ſupported by hiſtory; ſeveral writers mention no more of her, than that the queen ſo vented her ſpleen on Roſamond as that the lady lived not long after. Other writers aſſert that ſhe died a natural death; and the ſtory of her being poiſoned is thought to have ariſen from the figure of a cup on her tomb. She was buried in the church of Godſtow, oppoſite to the high altar, where her body remained till it was ordered to be removed with every mark of diſgrace by Hugh biſhop of Lincoln, in 1191. She was, however, by many conſidered as a ſaint after her death, as appears from an inſcription on a croſs which Leland ſays ſtood near Godſtow:

Qui meat hac oret, ſignum ſalutis adoret,
Utque ſibi detur veniam. Roſamunda precetur.

Groſe's Antiquities of England and Wales, vol. iv. p. 176, &c.

And alſo by the following ſtory: Roſamond, during her reſidence at her bower, made ſeveral viſits to Godſtow; where being frequently reproved for the life ſhe led, and threatened with the conſequences in a future ſtate, ſhe always anſwered, that ſhe knew ſhe ſhould be ſaved; and as a token to them, ſhowed a tree which ſhe ſaid would be turned into a ſtone when ſhe was with the ſaints in heaven. Soon after her death this wonderful metamorphoſis happened, and the ſtone was ſhown to ſtrangers at Godſtow till the time of the diſſolution.

Roſary || Roſcommon.

ROSARY, among the Roman catholics. See Chaplet.

ROSBACH, a town of Germany, in Saxony, famous for a victory obtained here by the king of Pruſſia over the French, on November 5. 1757, in which 10,000 of the French were killed or taken priſoners, with the loſs of no more than 500 Pruſſians. See Prussia, n° 30.

ROSCHILD, a town of Denmark, in the iſle of Zealand, with a biſhop's ſee and a ſmall univerſity. It is famous for a treaty concluded here in 1658; and in the great church there are ſeveral tombs of the kings of Denmark. It is ſeated at the bottom of a ſmall bay, in E. Long. 12. 20. N. Lat. 55. 40.

ROSCOMMON, a county of Ireland, in the province of Connaught, bounded on the weſt by the river Suc, on the eaſt by the Shannon, on the north by the Curlew mountains, on the ſouth and ſouth-eaſt by the King's county and part of Galway. Its length is 35 miles, its breadth 28. The air of the county, both on the plains and mountains, is healthy; the ſoil yields plenty of graſs, with ſome corn, and feeds numerous herds of cattle. The Curlew mountains on the north are very high and ſteep; and, till a road with great labour and difficulty was cut through them, were impaſſable.

Roscommon, which gives the title of earl to the family of Dillon, and name to the county, though not large, is both a parliamentary borough and the county town.

ROSCOMMON (Wentworth Dillon, earl of), a celebrated poet of the 17th century, was the ſon of James Dillon earl of Roſcommon; and was born in Ireland, under the adminiſtration of the firſt earl of Strafford, who was his uncle, and from whom he received the name of *Wentworth* at his baptiſm. He paſſed his infancy in Ireland; after which the earl of Strafford ſent for him into England, and placed him at his own ſeat in Yorkſhire, under the tuition of Dr Hall, afterwards biſhop of Norwich, who inſtructed him in Latin, without teaching him the common rules of grammar, which he could never retain in his memory, and yet he learnt to write in that language with claſſical elegance and propriety. On the earl of Strafford's being impeached, he went to complete his education at Caen in Normandy; and after ſome years travelled to Rome, where he became acquainted with the moſt valuable remains of antiquity, and in particular was well ſkilled in medals, and learned to ſpeak Italian with ſuch grace and fluency, that he was frequently taken for a native. He returned to England ſoon after the Reſtoration, and was made captain of the band of penſioners; but a diſpute with the lord privy ſeal, about a part of his eſtate, obliged him to reſign his poſt, and reviſit his native country, where the duke of Ormond appointed him captain of the guards. He was unhappily very fond of gaming; and as he was returning to his lodgings from a gaming-table in Dublin, he was attacked in the dark by three ruffians, who were employed to aſſaſſinate him.

Roſcommon. The earl defended himſelf with ſuch reſolution, that he had diſpatched one of the aggreſſors, when a gentleman paſſing that way took his part, and diſarmed another, on which the third ſought his ſafety in flight. This generous aſſiſtant was a diſbanded officer of good family and fair reputation, but reduced to poverty; and his lordſhip rewarded his bravery by reſigning to him his poſt of captain of the guards. He at length returned to London; when he was made maſter of the horſe to the ducheſs of York, and married the lady Frances, eldeſt daughter of Richard earl of Burlington, who had been the wife of Colonel Courtney. He here diſtinguiſhed himſelf by his writings: and in imitation of thoſe learned and polite aſſemblies with which he had been acquainted abroad, began to form a ſociety for refining and fixing the ſtandard of the Engliſh language, in which his great friend Mr Dryden was a principal aſſiſtant. This ſcheme was entirely defeated by the religious commotions which enſued on king James's acceſſion to the throne. In 1683 he was ſeized with the gout; and being too impatient of pain, he permitted a bold French empiric to apply a repelling medicine, in order to give him preſent relief; which drove the diſtemper into his bowels, and in a ſhort time put a period to his life, in January 1684. He was buried with great pomp in Weſtminſter-abbey.

His poems, which are not numerous, are in the body of Engliſh poetry collected by Dr Johnſon. His "Eſſay on Tranſlated Verſe," and his tranſlation of "Horace's Art of Poetry," have great merit. Waller addreſſed a poem to his lordſhip upon the latter, when he was 75 years of age. "In the writings of this nobleman we view (ſays Fenton) the image of a mind naturally ſerious and ſolid; richly furniſhed and adorned with all the ornaments of art and ſcience; and thoſe ornaments unaffectedly diſpoſed in the moſt regular and elegant order. His imagination might probably have been more fruitful and ſprightly, if his judgement had been leſs ſevere; but that ſeverity (delivered in a maſculine, clear, ſuccinct ſtyle) contributed to make him ſo eminent in the didactical manner, that no man, with juſtice, can affirm he was ever equalled by any of our nation, without confeſſing at the ſame time that he is inferior to none. In ſome other kinds of writing his genius ſeems to have wanted fire to attain the point of perfection; but who can attain it? He was a man of an amiable diſpoſition, as well as a good poet; as Pope, in his 'Eſſay on Criticiſm,' hath teſtified in the following lines:

——— Roſcommon not more learn'd than good,
With manners generous as his noble blood;
To him the wit of Greece and Rome was known,
And every author's merit but his own."

We muſt allow of Roſcommon, what Fenton has not mentioned ſo diſtinctly as he ought, and, what is yet very much to his honour, that he is perhaps the only correct writer in verſe before Addiſon; and that, if there are not ſo many or ſo great beauties in his compoſitions as in thoſe of ſome contemporaries, there are at leaſt fewer faults. Nor is this his higheſt praiſe; for Pope has celebrated him as the only moral writer of King Charles's reign:

Unhappy Dryden! in all Charles's days,
Roſcommon only boaſts unſpotted lays.

Roſe. Of Roſcommon's works, the judgment of the public ſeems to be right. He is elegant, but not great; he never labours after exquiſite beauties, and he ſeldom falls into groſs faults. His verſification is ſmooth, but rarely vigorous, and his rhymes are remarkably exact. He improved taſte, if he did not enlarge knowledge, and may be numbered among the benefactors to Engliſh literature.

ROSE, in botany. See Rosa.

Eſſence of Roſes. See *Roſes Otter.*

Roſe of Jericho, ſo called becauſe it grows in the plain of Jericho, though it did not originally grow there. It has perhaps been ſo named by travellers who did not know that it was brought from Arabia Petræa. Roſe buſhes are frequently found in the fields about Jericho; but they are of a ſpecies much inferior to thoſe ſo much extolled in Scripture, the flowers of which ſome naturaliſts pretend to have in their cabinets.

Travels through Syria and Paleſtine. "The roſe ſhrub of Jericho (ſays Mariti) is a ſmall plant, with a buſhy root, about an inch and a half in length. It has a number of ſtems which diverge from the earth: they are covered with few leaves; but it is loaded with flowers, which appear red when in bud, turn paler as they expand, and at length become white entirely. Theſe flowers appear to me to have a great reſemblance to thoſe of the elder-tree; with this difference, that they are entirely deſtitute of ſmell. The ſtems never riſe more than four or five inches from the ground. This ſhrub ſheds its leaves and its flowers as it withers. Its branches then bend in the middle, and becoming entwined with each other to the top, form a kind of globe. This happens during the great heats; but during moiſt and rainy weather they again open and expand.

"In this country of ignorance and ſuperſtition, people do not judge with a philoſophical eye of the alternate ſhutting and opening of this plant: it appears to them to be a periodical miracle, which heaven operates in order to make known the events of this world. The inhabitants of the neighbouring cantons come and examine theſe ſhrubs when they are about to undertake a journey, to form an alliance, to conclude any affair of importance, or on the birth of a ſon. If the ſtems of the plants are open, they do not doubt of ſucceſs; but they account it a bad omen to ſee them ſhut, and therefore renounce their project if it be not too late.

"This plant is neither ſubject to rot nor to wither. It will bear to be tranſplanted; and thrives without degenerating in any kind of ſoil whatever."

Roſes Otter (or eſſential oil of), is obtained from roſes by ſimple diſtillation, and may be made in the following manner: A quantity of freſh roſes, for example 40 pounds, are put in a ſtill with 60 pounds of water, the roſes being left as they are with their calyxes, but with the ſtems cut cloſe. The maſs is then well mixed together with the hands, and a gentle fire is made under the ſtill; when the water begins to grow hot, and fumes to riſe, the cap of the ſtill is put on, and the pipe fixed; the chinks are then well luted with paſte, and cold water put on the refrigeratory at top: the receiver is alſo adopted at the end of the pipe; and the fire is continued under the ſtill, neither too violent nor too weak. When the impregnated water begins to come over, and the ſtill is very hot, the fire is leſſen-

ed

Roſe, Roſetto.

ed by gentle degrees, and the diſtillation continued till 30 pounds of water are come over, which is generally done in about four or five hours; this roſe-water is to be poured again on a freſh quantity (40 pounds) of roſes, and from 15 to 20 pounds of water are to be drawn by diſtillation, following the ſame proceſs as before. The roſe-water thus made and cohobated will be found, if the roſes were good and freſh, and the diſtillation carefully performed, highly ſcented with the roſes. It is then poured into pans either of earthen ware or of tinned metal, and left expoſed to the freſh air for the night. The otter or eſſence will be found in the morning congealed, and ſwimming on the top of the water; this is to be carefully ſeparated and collected either with a thin ſhell or a ſkimmer, and poured into a vial. When a certain quantity has thus been obtained, the water and feces muſt be ſeparated from the clear eſſence, which, with reſpect to the firſt, will not be difficult to do, as the eſſence congeals with a ſlight cold, and the water may then be made to run off. If, after that, the eſſence is kept fluid by heat, the feces will ſubſide, and may be ſeparated; but if the operation has been neatly performed, theſe will be little or none. The feces are highly perfumed as the eſſence, and muſt be kept, after as much of the eſſence has been ſkimmed from the roſe-water as could be. The remaining water ſhould be uſed for freſh diſtillations, inſtead of common water, at leaſt as far as it will go.

The above is the whole proceſs, as given in the Aſiatic Reſearches by lieutenant-colonel Polier *, of making genuine otter of roſes. But attempts (he ſays) are often made to augment the quantity, though at the expence of the quality. Thus the raſpings of ſandal-wood, which contain a deal of eſſential oil, are uſed; but the impoſition is eaſily diſcovered, both by the ſmell, and becauſe the eſſential oil of ſandal-wood will not congeal in common cold. In other places they adulterate the otter by diſtilling with the roſes a ſweet-ſcented graſs, which colours it of a high clear green. This does not congeal in a ſlight cold. There are numerous other modes, far more palpable, of adulteration. The quantity of eſſential oil to be obtained from roſes is very precarious, depending on the ſkill of the diſtiller, on the quality of the roſes, and the favourableneſs of the ſeaſon. The colour of the otter is no criterion of its goodneſs, quality, or country. The calyxes by no means diminiſh the quality of otter, nor do they impart any green colour to it. They indeed augment the quantity, but the trouble neceſſary to ſtrip them is ſuch as to prevent their being often uſed.

* Vol. I. p. 322.

Rose-Noble, an ancient Engliſh gold coin, firſt ſtruck in the reign of Edward III. It was formerly current at 6s. 8d. and ſo called becauſe ſtamped with a roſe. See MONEY.

Rose-Wood. See ASPALATHUS.

ROSETTO, a town of Africa, in Egypt, is pleaſantly ſituated on the weſt ſide of that branch of the Nile called by the ancients *Bolbitinum*, affirmed by Herodotus to have been formed by art; the town and caſtle being on the right hand as you enter that river. Any one that ſees the hills about Roſetto would judge that they had been the ancient barriers of the ſea, and conclude that the ſea has not loſt more ground than the ſpace between the hills and the water.

Roſetto is eſteemed one of the pleaſanteſt places in Egypt: it is about two miles long, and conſiſts only of two or three ſtreets. The country about it is moſt delightful and fertile, as is all the whole Delta on the other ſide of the Nile, exhibiting the moſt pleaſant proſpect of gardens, orchards, and corn-fields, excellently well cultivated. The caſtle ſtands about two miles north of the town, on the weſt ſide of the river. It is a ſquare building, with round towers at the four corners, mounted with ſome pieces of braſs cannon. The walls are of brick, caſed with ſtone, ſuppoſed to have been built in the time of the holy war, though ſince repaired by Cheyk Begh. At a little diſtance lower, on the other ſide of the river, is a platform, mounted with ſome guns, and to the eaſt of it are the ſalt lakes, out of which they gather great quantities of that commodity. At ſome farther diſtance, ſailing up the river, we ſee a high mountain, on which ſtands an old building that ſerves for a watch-tower. From this eminence is diſcovered a large and deep gulph, in form of a creſcent, which appears to have been the work of art, though it be now filled up, and diſcovers nothing but its ancient bed. Roſetto is grown a conſiderable place for commerce, and hath ſome good manufactures in the linen and cotton way; but its chief buſineſs is the carriage of goods to Cairo, all the European merchandiſe being brought thither from Alexandria by ſea, and carried in other boats to that capital; as thoſe that are brought down from it on the Nile are there ſhipped off for Alexandria; on which account the Europeans have here their vice-conſuls and factors to tranſact their buſineſs; and the government maintains a beigh, a cuſtomhouſe, and a garriſon, to keep all ſafe and quiet.

Roſetto, Roſicrucians.

In the country to the north of Roſetto are delightful gardens, full of orange, lemon, and citron trees, and almoſt all ſorts of fruits, with a variety of groves of palm-trees; and when the fields are green with rice, it adds greatly to the beauty of the country. It is about 25 miles north-eaſt of Alexandria, and 100 north-weſt of Cairo. E. Long. 30. 45. N. Lat. 31, 30.

ROSICRUCIANS, a name aſſumed by a ſect or cabal of hermetical philoſophers; who aroſe, as it has been ſaid, or at leaſt became firſt taken notice of, in Germany, in the beginning of the fourteenth century. They bound themſelves together by a ſolemn ſecret, which they all ſwore inviolably to preſerve; and obliged themſelves, at their admiſſion into the order, to a ſtrict obſervance of certain eſtabliſhed rules. They pretended to know all ſciences, and chiefly medicine; whereof they publiſhed themſelves the reſtorers. They pretended to be maſters of abundance of important ſecrets, and, among others, that of the philoſopher's ſtone; all which they affirmed to have received by tradition from the ancient Egyptians, Chaldeans, the Magi, and Gymnoſophiſts. They have been diſtinguiſhed by ſeveral names, accommodated to the ſeveral branches of their doctrine. Becauſe they pretend to protract the period of human life, by means of certain noſtrums, and even to reſtore youth, they were called *Immortales*; as they pretended to know all things, they have been called *Iluminati*; and becauſe they have made no appearance for ſeveral years, unleſs the ſect of Illuminated which lately ſtarted up on the continent derives its origin from them, they have been called the *inviſible, brothers*. Their ſociety is

Rosicrucians. frequently signed by the letters F. R. C. which some among them interpret *fratres roris cœli*; it being pretended, that the matter of the philosopher's stone is dew concocted, exalted, &c. Some, who are no friends to free-masonry, make the present flourishing society of free masons a branch of Rosicrucians; or rather the Rosicrucians themselves, under a new name or relation, viz. as retainers to building. And it is certain, there are some free-masons who have all the characters of Rosicrucians; but how the æra and original of masonry (see MASONRY), and that of Rosicrucianism, here fixed from Naudæus, who has written expressly on the subject, confist, we leave others to judge.

Notwithstanding the pretended antiquity of the Rosicrucians, it is probable that the alchemists, Paracelsists, or fire-philosophers, who spread themselves through almost all Europe about the close of the sixteenth century, assumed about this period the obscure and ambiguous title of Rosicrucian brethren, which commanded at first some degree of respect, as it seemed to be borrowed from the arms of Luther, which were a cross placed upon a rose. But the denomination evidently appears to be derived from the science of chemistry. It is not compounded, says Mosheim, as many imagine, of the two words *rosa* and *crux*, which signify rose and cross, but of the latter of these words, and the Latin *ros*, which signifies dew. Of all natural bodies, dew was deemed the most powerful dissolvent of gold; and the cross, in the chemical language, is equivalent to light, because the figure of a cross + exhibits, at the same time, the three letters of which the word *lux*, or light, is compounded. Now *lux* is called, by this sect, the seed or menstruum of the red dragon, or, in other words, that gross and corporeal light which, when properly digested and modified, produces gold. Hence it follows, if this etymology be admitted, that a Rosicrucian philosopher is one who, by the intervention and assistance of the dew, seeks for light, or, in other words, the substance called the philosopher's stone. The true meaning and energy of this denomination did not escape the penetration and sagacity of Gassendi, as appears by his *Examen Philosophiæ Fluddanæ*, sect. 15. tom. iii. p. 261. And it was more fully explained by Renaudot, in his *Conferences Publiques*, tom. iv. p. 87.

At the head of these fanatics were Robert Fludd, an English physician, Jacob Behmen, and Michael Mayer; but if rumour may be credited, the present Illuminated have a head of higher rank. The common principles, which serve as a kind of centre of union to the Rosicrucian society, are the following: They all maintain, that the dissolution of bodies, by the power of fire, is the only way by which men can arrive at true wisdom, and come to discern the first principles of things. They all acknowledge a certain analogy and harmony between the powers of nature and the doctrines of religion; and believe that the Deity governs the kingdom of grace by the same laws with which he rules the kingdom of nature; and hence they are led to use chemical denominations to express the truths of religion. They all hold, that there is a sort of divine energy, or soul, diffused through the frame of the universe, which some call the *archæus*, others the *universal spirit*, and which others mention under different appellations. They all talk in the most superstitious manner of what they call the signatures of things, of the power of the stars over all corporeal beings, and their particular influence upon the human race, of the efficacy of magic, and the various ranks and orders of demons.—These demons they divide into two orders, *sylphs* and *gnomes*; which supplied the beautiful machinery of Pope's *Rape of the Lock*. In fine, the Rosicrucians and all their fanatical descendants agree in throwing out the most crude incomprehensible notions and ideas, in the most obscure, quaint, and unusual expressions.—Mosh. Eccl. Hist. vol. iv. p. 266, &c. English edition, 8vo. See BEHMEN and THEOSOPHISTS. Rosier Roslin.

ROSIER. See PILATRE.

ROSIERS-AUX-SALINES, a town of France, in Lorraine, and in the bailiwick of Nancy, famous for its salt-works. The works that king Stanislaus made here are much admired. It is seated on the river Muert, in E. Long. 6. 27. N. Lat. 48. 32.

ROSKILD, formerly the royal residence and metropolis of Denmark, stands at a small distance from the Bay of Isefiord, not far from Copenhagen. In its flourishing state it was of great extent, and comprised within its walls 27 churches, and as many convents.—Its present circumference is scarcely half an English mile, and it contains only about 1620 souls. The houses are of brick, and of a neat appearance. The only remains of its original magnificence are the ruins of a palace and of the cathedral, a brick building with two spires, in which the kings of Denmark are interred. Little of the original building now remains. According to Holberg, it was constructed of wood, and afterwards built with stone, in the reign of Canute.—From an inscription in the choir, it appears to have been founded by Harold VI. who was styled king of Denmark, England, and Norway. Some verses, in barbarous Latin, obscurely allude to the principal incidents of his life; adding, that he built this church, and died in 980.—See Coxe's Travels into Poland, Russia, Sweden, and Denmark, vol. ii. p. 525.

ROSLEY-HILL, a village in Cumberland (England), with a fair on Whit-Monday, and every fortnight after till September 29. for horses, horned cattle, and linen cloth.

ROSLIN, or ROSKELYN, a place in the county of Mid Lothian in Scotland, remarkable for an ancient chapel and castle. The chapel was founded in 1446, by St Clare, prince of Orkney, for a provost, six prebendaries, and two singing boys. The outside is ornamented with a multitude of pinnacles, and variety of ludicrous sculpture. The inside is 69 feet long, the breadth 34, supported by two rows of clustered pillars, between seven and eight feet high, with an aisle on each side. The arches are obtusely Gothic. These arches are continued across the side-aisles, but the centre of the church is one continued arch, elegantly divided into compartments, and finely sculptured. The capitals of the pillars are enriched with foliage, and a variety of figures; and amidst a heavenly concert appears a cherubim blowing the ancient Highland bagpipes. The castle is seated on a peninsulated rock, in a deep glen far beneath, and accessible by a bridge of great height. This had been the seat of the great family of *Sinclair*. Of this house was Oliver, favourite of James V. and the innocent cause of the loss of the battle of Solway Moss, by reason of the envy of the nobility on account of his being preferred to the command.

Near

Roſlin, Roſmarinus.

Near this place the Engliſh received three defeats in one day under John de Segrave the Engliſh regent of Scotland in 1302. The Scots, under their generals Cummin and Fraſer, had reſolved to ſurpriſe Segrave; with which view they began their march on the night of Saturday preceding the firſt Sunday of Lent, and reached the Engliſh army by break of day. Segrave, however, had time to have fallen back upon the other diviſion which lay behind him; but, either deſpiſing his enemies too much, or thinking that he would be diſhonoured by a retreat, he encountered the Scots; the conſequence of which was, that he himſelf was made priſoner, and all his men either killed or taken, except ſuch as fled to the other diviſion. As in this routed diviſion there had been no fewer than 300 knights, each of whom brought at leaſt five horſemen into the field, great part of the Scots infantry quickly furniſhed themſelves with their horſes; but, as they were dividing the ſpoils, another diviſion of the Engliſh appeared, and the Scots were obliged to fight them alſo. The Engliſh, after a bloody engagement, were defeated a ſecond time; which was no ſooner done, than the third and moſt powerful diviſion made its appearance. The Scots were now quite exhauſted; and, pleading the exceſſive labours they had already undergone, earneſtly requeſted their generals to allow them to retreat while it was yet in their power. Their two generals, who perhaps knew that to be impracticable, reminded them of the cauſe for which they were fighting, the tyranny of the Engliſh, &c. and by theſe arguments prevailed upon them to fight a third time; though, previous to the engagement, they were reduced to the cruel neceſſity of putting all the common ſoldiers whom they had made priſoners to the ſword. The victory of the Scots at this time was leſs complete than the other two had been; ſince they could not prevent the retreat of the Engliſh to Edinburgh, nor Segrave from being reſcued from his captivity.

ROSMARINUS, ROSEMARY, in botany: A genus of the monogynia order, belonging to the diandria claſs of plants, and in the natural method ranking under the 42d order, *Verticillatæ*. The corolla is unequal, with its upper lip bipartite; the filaments are long, curved, and ſimple, each having a ſmall dent. There are two ſpecies, the anguſtifolia and latifolia, or narrow and broad leaved roſemary; of which the ſecond has larger flowers and a ſtronger ſcent than the other. There are two varieties; one of the firſt ſort with ſtriped leaves, called the *ſilver roſemary*; and the other with yellow, whence it is called the *gold-ſtriped roſemary*. Theſe plants grow naturally in the ſouthern parts of France, Spain, and Italy; where, upon dry rocky ſoils near the ſea, they thrive prodigiouſly, and perfume the air in ſuch a manner as to be ſmelt at a great diſtance from the land.—However, they are hardy enough to bear the cold of our ordinary winters, provided they be planted upon a poor, dry, gravelly ſoil, on which they will endure the cold much better than in a richer ground, where, growing more vigorouſly in ſummer, they are more apt to be injured by froſt in winter; nor will they have ſuch a ſtrong aromatic ſcent as thoſe on a dry and barren ſoil. They are to be propagated either by ſlips or cuttings.

Roſemary has a fragrant ſmell, and a warm pungent bitteriſh taſte, approaching to thoſe of lavender: the leaves and tender tops are ſtrongeſt; next to theſe, the cup of the flower; the flowers themſelves are conſiderably the weakeſt, but moſt pleaſant. Aqueous liquors extract great ſhare of the virtues of roſemary leaves by infuſion, and elevate them in diſtillation; along with the water ariſes a conſiderable quantity of eſſential oil, of an agreeable ſtrong penetrating ſmell. Pure ſpirit extracts in great perfection the whole aromatic flavour of the roſemary, and elevates very little of it in diſtillation; hence the reſinous maſs, left upon extracting the ſpirit, proves an elegant aromatic, very rich in the peculiar qualities of the plant. The flowers of roſemary give over great part of their flavour in diſtillation with pure ſpirit; by watery liquors, their fragrance is much injured; by beating, deſtroyed.

Roſs.

ROSS, in Herefordſhire, in England, 119 miles from London, is a fine old town, with a good trade, on the river Wye. It was made a free borough by Henry III. It is a populous place, famous for cyder, and was noted in Camden's time for a manufacture of iron-wares. There are in it two charity-ſchools, which lately have been enriched by a legacy of 200 l. *per annum*, from Mr Scott, in Dec. 1786, a ſecond *Man of Roſs*. And its market and fairs are well ſtored with cattle and other proviſions. At the weſt end of it there is a fine broad cauſeway, conſtructed by Mr. John Kyrle, the celebrated *Man of Roſs*, who alſo raiſed the ſpire upward of 100 feet, and incloſed a piece of ground with a ſtone wall, and ſunk a reſervoir in its centre, for the uſe of the inhabitants of the town. He died in 1714, aged 90, with the bleſſing of all who knew him, both rich and poor. There cannot be a pleaſanter country than the banks of the Wye, between this town and Monmouth. W. Long. 2. 25. N. Lat. 51. 56.

Ross, a county of Scotland, including Tayne and Cromarty, ſtretching 80 miles in length, and 78 in breadth, is bounded on the weſt by the weſtern ſea, and part of the iſle of Sky; by Inverneſs, on the ſouth; Strathnavern and Sutherland, on the north and north-eaſt; and by Cromarty and the Murray-Frith on the eaſt. Tayne includes the greater part of Roſs, with the iſles of Sky, Lewis, and Harries. Cromarty lies on the other ſide of the Murray-Frith, to the northward of Inverneſs, extending but 12 miles in length, bounded on the ſouth and eaſt by part of Roſs and the Frith of Murray, and by the Frith of Cromarty on the north. The ſhire of Roſs takes up the whole breadth of the iſland; and being much indented with bays and inlets from both ſeas, appears of a very irregular form.—Theſe bays afford ſafe harbours for ſhipping, eſpecially that of Cromarty, which is capacious enough to contain all the fleets of Europe, being land-locked on every ſide, and is in all reſpects one of the beſt harbours in the known world. The Frith of Tayne, on the eaſt ſide of the ſhire, runs up 25 miles from the ſea, as far as the Cape Tarbat, dividing Roſs from Sutherland: it is about ſeven miles broad at the mouth, but, on account of quick-ſands, unſafe for navigation. The country of Roſs is encumbered with huge mountains, on which the ſnow lies for the greateſt part of the year; theſe, however, yield good paſture; but on the eaſtern ſide, next the German ocean, the country admits of agriculture, and produces good crops of corn. The valleys are fertilized by ſeveral rivers, among which we reckon the Okel, the Charron, and the Braan; beſides a number of freſh-water lakes, which indeed are found.

Ros-ſolis || Rota.

[illegible] every part of the country. The valleys, or [illegible] are generally covered with wood; and near Al[illegible] there are forests of fir 15 or 20 miles in length, well ſtocked with deer and game of all ſorts. Great numbers of black cattle, horſes, ſheep, and goats, are fed upon the mountains; and the ſea, rivers, and lakes, ſwarm with fiſh and fowl. The lochs on the weſtern coaſt abound with herrings in the ſeaſon, particularly Loch Ew, about nine miles long, and three in breadth; one part of this is formed by a bay, or inlet of the ſea; and the other is a lake of freſh water. The ſides of it are covered with wood, where formerly abundance of iron was ſmelted. Though the middle part of Roſs, called *Ardroſs*, is mountainous and ſcarce inhabited, the north eaſt parts on the rivers Okel, Charron, and Frith of Tayne, are fruitful, and abound with villages. Coygach and Aſsgut, two northerly diſtricts, are bare and hilly; yet they abound with deer and black cattle; and we ſee ſeveral good houſes towards the coaſt, where there are alſo promontories, and huge rocks of marble. Ardmeanach, part of the peninſula betwixt the bays of Cromarty and Murray, is a barony, which of old beſtowed a title on the king of Scotland's ſecond ſon. The diſtrict of Glen-elchig, on the ſouth-weſt, was the paternal eſtate of the earl of Seaforth, chief of the clan of Mackenzie: but the laſt earl of that name, having riſen in rebellion, was in the year 1719 defeated at Glenſhiel, in this very quarter, together with a ſmall body of Spaniards by whom he had been joined. His auxiliaries were taken; and though he himſelf, with ſome of his friends, eſcaped to the continent, his eſtate and honours were forfeited. At the ſame time, the king's troops, who obtained this victory, diſmantled the caſtle of Yion-donnen, ſituated on an iſland in a bay that fronts the iſle of Sky. It belonged to the crown; but the office of hereditary governor was veſted in the earl of Seaforth, and here he had erected his magazine. Roſs is chiefly peopled by the Mackenzies and Fraſers, two warlike clans, who ſpeak Erſe, and live in the Highland faſhion. There are fiſheries carried on along the coaſt; but their chief traffic is with ſheep and black cattle. The chief towns of Roſs are Channerie, Dingwall, Tayne, and Fortroſe.

ROSSANO, a ſtrong town of Italy, in the kingdom of Naples, and in the Hither Calabria, with an archbiſhop's ſee, and the title of a principality. It is pretty large, well peopled, and ſeated on an eminence ſurrounded with rocks. There is nothing in this archiepiſcopal city that claims much notice; the buildings are mean, the ſtreets vilely paved and contrived. The number of inhabitants does not exceed 6000, who ſubſiſt by the ſale of their oil, the principal object of their attention, though the territory produces a great deal of good wine and corn.

Roſſano probably owes its origin to the Roman emperors, who conſidered it as a poſt equally valuable for ſtrength and convenience of traffic. The Marſans, a family of French extraction, poſſeſſed this territory, with the title of prince, from the time of Charles II. to that of Alphonſus II. when the laſt male heir was, by that prince's order, put to death in Iſchia, where he was confined for treaſon. It afterwards belonged to Bona, queen of Poland, in right of her mother Iſabella, daughter to Alphonſus II. and at her deceaſe returned to the crown. It was next in the poſſeſſion of the Aldobrandini, from whom the Borgheſi inherited it. So late as the 16th century, the inhabitants of this city ſpoke the Greek language, and followed the rites of the eaſtern church. Here was formerly the moſt celebrated rendezvous of the Baſilian monks in Magna Grecia. E. Long. 16. 52. N. Lat 39. 45.

ROS-SOLIS, *Sun-dew*, an agreeable ſpirituous liquor, compoſed of burnt brandy, ſugar, cinnamon, and milk-water; and ſometimes perfumed with a little muſk. It has its name from being at firſt prepared wholly of the juice of the plant ros ſolis, or droſera. See DROSERA.

ROSTOCK, a town of Germany, in the circle of Upper Saxony, and duchy of Mecklenburg, with an univerſity and a very good harbour. It is the beſt town in this country; and has good fortifications, with an arſenal. The duke has a ſtrong caſtle, which may be looked upon as a citadel. It is divided into three parts, the Old, the New, and the Middle Towns. It was formerly one of the Hanſeatic towns, and is ſtill Imperial, under the protection of the duke of Mecklenburg. It is ſeated on a lake where the river Varne falls into it, and carries large boats. The government is in the hands of 24 aldermen, elected out of the nobility, univerſity, and principal merchants; four of whom are burgomaſters, two chamberlains, two ſtewards for the river, and two judges of civil and criminal matters. Theſe 24 are called the Upper Houſe, and have in a manner the whole executive power lodged in them, with the power of coining money, and electing officers. There is alſo a common council of 100 inferior citizens, who are ſummoned to give their advice upon extraordinary emergencies relating to the whole community. The principal things worth ſeeing are the fortifications, the prince's palace, the ſtadthouſe, the arſenal, and the public library. The town is famous for good beer, which they export in great quantities. Some years ago they had no leſs than 250 privileged brewers, who, it is ſaid, brewed ſo many thouſand tuns a year, beſides what particular perſons brew for their own uſe. E. Long. 12. 55. N. Lat. 54. 8.

ROSTOFF, or ROSTOW, a large town of the Ruſſian empire, and capital of a territory of the ſame name, with an archbiſhop's ſee, ſeated on the lake Coteri, in E. Long. 40. 25. N. Lat. 57. 5. The duchy of Roſtoff is bounded on the north by Jaroſlow, on the eaſt by Sutdal, on the ſouth by the duchy of Moſcow, and on the weſt by that of Tuere.

ROSTRA, in antiquity, a part of the Roman forum, wherein orations, pleadings, funeral harangues, &c. were delivered.

ROSTRUM, literally denotes the beak or bill of a bird; and hence it has been figuratively applied to the beak or head of a ſhip.

ROSYCRUCIANS. See ROSICRUCIANS.

ROT, a very fatal diſeaſe incident to ſheep, ariſing from wet ſeaſons, and too moiſt paſture. It is very difficult of cure, and is attended with the ſingular circumſtance of a kind of animals being found in the blood-veſſels. See OVIS and SHEEP.

ROTA, the name of an eccleſiaſtical court of Rome, compoſed of 12 prelates, of whom one muſt be a German, another a Frenchman, and two Spaniards; the other eight are Italians, three of whom muſt be Romans, and the other five a Bologneſe, a Ferraran, a Milaneſe, a Venetian, and a Tuſcan.—This is one of the

Rotaceæ || Rotation.

the moſt auguſt tribunals in Rome, which takes cognizance of all ſuits in the territory of the church, by appeal; as alſo of all matters, beneficiary and patrimonial.

ROTACEÆ (from *rota*, "a wheel"), the name of the 20th order in Linnæus's Fragments of a Natural Method; conſiſting of plants with one flat, wheel-ſhaped petal, without a tube. See BOTANY, p. 461.

ROTALA, in botany; a genus of the monogynia order, belonging to the triandria claſs of plants. The calyx is tridentate; there is no corolla; the capſule is trilocular and polyſpermous.

ROTANG. See CALAMUS.

1 Definition and intereſting nature of the ſubject.

ROTATION, is a term which expreſſes the motion of the different parts of a ſolid body round an axis, and diſtinct from the progreſſive motion which it may have in its revolution round a diſtant point. The earth has a rotation round its axis, which produces the viciſſitudes of day and night; while its revolution round the ſun, combined with the obliquity of the equator, produces the varieties of ſummer and winter.

The mechaniſm of this kind of motion, or the relation which ſubſiſts between the intenſity of the moving forces, modified as it may be by the manner of application, and the velocity of rotation, is highly intereſting, both to the ſpeculative philoſopher and to the practical engineer. The preceſſion of the equinoxes, and many other aſtronomical problems of great importance and difficulty, receive their ſolutions from this quarter: and the *actual performance* of our moſt valuable machines cannot be aſcertained by the mere principles of equilibrium, but require a previous acquaintance with certain general propoſitions of rotatory motion.

It is chiefly with the view of aſſiſting the engineer that we propoſe to deliver in this place a few fundamental propoſitions; and we ſhall do it in as familiar and popular a manner as poſſible, although this may cauſe the application of them to the abſtruſe problems of aſtronomy to be greatly deficient in the elegance of which they are ſuſceptible.

2 State of the particles in moving round an axis.

When a ſolid body turns round an axis, retaining its ſhape and dimenſions, every particle is actually deſcribing a circle round this axis, and the axis paſſes through the centre of the circle, and is perpendicular to its plane. Moreover, in any inſtant of the motion, the particle is moving at right angles with the radius vector, or line joining it with *its* centre of rotation. Therefore, in order to aſcertain the direction of the motion of any particle P (fig. 1.). we may draw a ſtraight line PC from the particle perpendicular to the axis AB of rotation. This line will lie in the plane of the circle P *m n* of rotation of the particle, and will be its radius vector; and a line PQ drawn from the particle perpendicular to this radius vector will be a tangent to the circle of rotation, and will have the direction of the motion of this particle.

Plate ccccxlii.

The whole body being ſuppoſed to turn together, it is evident, that when it has made a complete rotation, each particle has deſcribed a circumference of a circle, and the whole paths of the different particles will be in the ratio of theſe circumferences, and therefore of their radii; and this is true of any portion of a whole turn, ſuch as $\frac{1}{2}$, $\frac{1}{4}$, or 20 degrees, or any arch whatever; therefore the velocities of the different particles are proportional to their radii vectores, or to their diſtances from the axis of rotation.

And, laſtly all theſe motions are in parallel planes, to which the axis of rotation is perpendicular. Rotation 5

How the rotation of different bodies in reſpect of velocity may be compared.

When we compare the rotations of different bodies in reſpect of velocity, it is plain that it cannot be done by directly comparing the velocity of *any* particle in one of the bodies with that of *any* particle of the other; for, as all the particles of each have different velocities, this compariſon can eſtabliſh no ratio. But we familiarly compare ſuch motions by the number of complete turns which they make in equal times, and we ſay that the ſecond hand of a clock turns 60 times faſter than the minute hand; now this compariſon is equally juſt in any part of a turn as in the whole. While the minute hand moves round one degree, the ſecond-hand moves 60; therefore, as the length or number of feet in the line uniformly deſcribed by a body in its progreſſive motion in a proper meaſure of its progreſſive velocity, ſo the number of degrees deſcribed by *any* particle of a whirling body in the circumference of its circle of rotation, or the angle deſcribed by *any* radius vector of that body, is a proper meaſure of its velocity of rotation. And in this manner may the rotation of two bodies be compared; and the velocity is with propriety termed ANGULAR VELOCITY.

6

An angle is directly as the length of the circumference on which it ſtands, and inverſely as the radius of the circle, and may be expreſſed by the fraction of which the numerator is the arch, and the denominator the radius. Thus the angle PCp may be expreſſed by $\frac{P\,p}{PC}$. This fraction expreſſes the portion of the radius which is equal to the arch which meaſures the angle; and it is converted into the uſual denomination of degrees, by knowing that one degree, or the 360th part of the circumference, is $\frac{1}{57,296}$ of the radius, or that an arch of 57,296 degrees is equal to the radius.

7 Effects, &c of the ſeveral particles connected in one body on each other.

When a ſolid body receives an impulſe on any one point, or when that point is anyhow urged by a moving force, it cannot move without the other points alſo moving. And whatever is the motion of any particle, that particle muſt be conceived as urged by a force preciſely competent to the production of that motion, by acting immediately on the particle itſelf. If this is not the particle immediately acted on by the external force, the force which really impels it is a force ariſing from the coheſion of the body. The particle immediately impelled by the external force is preſſed towards its neighbouring particles, or is drawn away from them; and, by this change of place, the connecting forces are brought into action, or are excited; they act on the particles adjoining, and change, or tend to change, their diſtances from the particles immediately beyond them; and thus the forces which connect this next ſeries of particles are alſo excited, and another ſeries of particles are made to exert their forces; and this goes on through the body till we come to the remote particle, whoſe motion we are conſidering. The forces which connect it with the adjoining ſeries of particles are excited, and the particles moved. We frequently ſay that the external moving force is propagated thro' the body to the diſtant particle; but this is not accurate. The particle is really and immediately moved by the forces which connect it with thoſe adjoining. It

Rotation. will greatly aſſiſt our conception of the manner in which motion is thus produced in a diſtant particle, if we conſider the particles as ſo many little balls, connected with each other by ſlender ſpiral ſprings like cork-ſcrews. Theſe would compoſe a maſs which would be compreſſible, or which could be ſtretched, &c. And if we give an impulſe to one of theſe balls, we ſhall ſee the whole aſſemblage in motion round any axis which we may ſuppoſe to ſupport it. Now any one of theſe balls is reſtored immediately to the elaſticity of the ſpiral wires which join it to its neighbours.

8 The laws by which the particles of bodies act on each other are equal, and the conſequences.

We are but little acquainted with the nature of theſe connecting forces. It can be learned only by the phenomena which are their effects. Theſe are various, almoſt beyond deſcription; but the mechanical philoſopher has little to do with this variety. The diſtinctions which are the immediate cauſes of fluidity, of hardneſs, ſoftneſs, elaſticity, ductility, are not of very difficult conception. There is one general fact which is ſufficient for our preſent purpoſe—the forces by which the particles of bodies act on each other are equal. This is a matter of unexcepted experience; and no other foundation can be given to it as a law of mechanical nature.

9 An immediate conſequence of this law is, that when two external forces A and B are in equilibrium by the intervention of a ſolid body (or rather when a ſolid body is in equilibrium between two external forces), theſe forces are equal and oppoſite; for the force A is in fact in immediate equilibrium with the oppoſite forces exerted by the particles to which it is applied, and is therefore equal and oppoſite to the force reſulting from the combination of all the forces which connect that particle with the ſeries of particles immediately adjoining. This reſulting force may with propriety be called the equivalent of the forces from the combination of which it reſults. The uſe of this term will greatly abbreviate language. This firſt ſet of connecting forces conſiſts of a number of diſtinct forces correſponding to each particle of the ſeries, and each force has an equal and oppoſite force correſponding to it: therefore the compound force by which the firſt ſeries of particles acts on that to which the external force A is applied, is equal and oppoſite to the compound force which connects this firſt ſeries with the next ſeries. And the ſame thing muſt be ſaid of each ſucceeding ſeries of particles, till we come at laſt to the particle to which the external force B is immediately applied. The force exerted by this particle is equal and oppoſite to that external force; and it is equal to the compound force exerted by the ſecond ſeries of particles on that ſide; therefore the forces A and B are equal and oppoſite.

10 It reſults from this propoſition, that *when any number of external forces are applied to a ſolid body, and it is in equilibrio between them, they are ſuch as would be in equilibrio if they were all applied to one point.* Let the forces aA, bB, cC, (fig. 2.), be applied to three particles of the ſolid body. Therefore aA is immediately in equilibrium with an equal and oppoſite force A α, reſulting from the compoſition of the force AD, which connects the particles A and B, and the force AE which connects A with C. In like manner bB is immediately in equilibrio with B β, the equivalent of the forces BF and BG; and cC is in immediate equilibrio with the equivalent C κ of the forces CH and CI. We ſhall conceive it very clearly if we ſuppoſe the three forces A a, B b, C c, to be exerted by means of threads pulling at the ſolid body. The connecting parts between A and B, as alſo between A and C, are ſtretched. The lines AB and AC may be conſidered as elaſtic threads. Each thread is equally ſtretched through its whole length; and therefore if we take AD to repreſent the force with which the particle A is held back by the particle B, and if we would alſo repreſent the force with which B is held back by A, we muſt make BF equal to AD. Now (n° 9.) the forces AD and BF are equal and oppoſite; ſo are the forces AE and CI; ſo are the forces CH and BG. Now it is evident, that if the ſix forces AD, BF, BG, CH, CI, AE, were applied to one particle, the particle would be in equilibrio; for each force is accompanied by an equal and oppoſite force: and if the force A α were applied in place of AD, AE, the equilibrium would remain, becauſe A α is equivalent to AD and AE. The ſame is true of B β and C κ. Therefore if the three forces A α, B β, C κ, were applied to one point, they would be in equilibrio. Conſequently if the three forces a A, b B, C c, which are reſpectively equal and oppoſite to A α, B β, C κ, are ſo applied, they will be in equilibrio. It is plain that this demonſtration may be extended to any number of forces.

We may juſt remark by the bye, that if three forces are thus in equilibrio, they are acting in one plane; and, if they are not parallel, they are really directed to one point: for any one of them muſt be equal and oppoſite to the equivalent of the other two; and this equivalent is the diagonal of a parallelogram, of which the other two are the ſides, and the diagonal and ſides of any parallelogram are in one plane; and ſince they are in one plane, and any one of them is in equilibrio with the equivalent of the other two, it muſt paſs thro' the ſame point with that equivalent, that is, through the point of concourſe of the other two.

11 Mechanical ſcience has been rendered abſtruſe by attempts at ſimplification.

Theſe very ſimple propoſitions are the foundation of the whole theory of ſtatics, and render it a very ſimple branch of mechanical ſcience. It has been made abſtruſe by our very attempts to ſimplify it. Many elaborate treatiſes have been written on the fundamental property of the lever, and in them all it has been thought next to an inſuperable difficulty to demonſtrate the equilibrium of a ſtraight lever when the parallel forces are inverſely as their diſtances from the fulcrum.

We think the demonſtrations of Archimedes, Fonſenex, D'Alembert, and Hamilton, extremely ingenious; but they only bring the mind into ſuch a ſtate of conception that it cannot refuſe the truth of the propoſition; and, except Mr Hamilton's, they labour under the diſadvantage of being applicable only to commenſurable diſtances and forces. Mr Vince's, in the Philoſophical Tranſactions for 1794, is the moſt ingenious of them all; and it is wonderful that it has not occurred long ago. The difficulty in them all has ariſen from the attempt to ſimplify the matter by conſidering a lever as an inflexible ſtraight line. Had it been taken out of this abſtract form, and conſidered as what it really is, a natural body, of ſome ſize, having its particles connected by equal and oppoſite forces, all difficulty would have vaniſhed.

Rotation.

That we may apply these propositions to explain the motion of rotation, we must recollect an unquestionable proposition in dynamics, that the force which produces any motion is equal and opposite to the force which would prevent it, when applied in the same place and in the same line, or which would extinguish it in the same time in which we suppose it to be produced. Therefore the force which is excited and made to act on any particle of a body, by the action of an external force on another particle, so as to cause it to move round an axis, is equal and opposite to the force which, when applied to that particle in the opposite direction, would be in equilibrio with the external force.

12 Mode of conceiving the magnitude of any moving force.

13 The only distinct notion we can form of the magnitude of any moving force is the quantity of motion which it can produce by acting uniformly during some given time. This will be had by knowing the velocity which it will produce in a body of known bulk. Thus we know that the weight of ten pounds of matter acting on it for a second will cause it to fall 16 feet with an uniformly accelerated motion, and will leave it in a state such that it would move on for ever at the rate of 32 feet in a second; which we call communicating the velocity of 32 feet per second. In the same manner, the best way of acquiring a distinct conception of the rotatory effort of a moving force, is to determine the quantity of rotatory motion which it can produce by acting uniformly during some known time.

14 And of the quantity and effort of rotatory motions.

Let a solid body turn round an axis passing through the point C (fig. 3.) perpendicular to the plane of this figure. Let this rotation be supposed to be produced by an external force acting in the direction FP. Let this force be such, that if the body were free, that is, unconnected with any axis supported by fixed points, it would, by acting uniformly during a small moment of time, cause its centre of gravity G (A) to describe a line of a certain length parallel to FP. This we know to be the effect of a moving force acting on any solid body in free space. The centre of gravity will always describe a straight line. Other particles may chance to move differently, if the body, besides its progressive motion, has also a motion of rotation, as is generally the case. Draw GI parallel to FP, and make GI to GC as the velocity which the external force would communicate to the centre of the body (if moving freely, unconnected with a supported axis), to the velocity which it communicates to it in the same time round the axis C*c*. Also let *m* be the number of equal particles, or the quantity of matter in the body. Then *m*.GI will express the quantity of motion produced by this force and is a proper measure of it as a moving force; for GI is twice the space described during the given time with an uniformly accelerated motion. Rotation.

But since the body cannot move any way but round the axis passing through C, the centre G will begin to move with the velocity, and in the direction, GH perpendicular to the line CG (n° 2.) And any particle A can only move in the direction AL, perpendicular to CA. Moreover, the velocities of the different particles are as their radii vectores; and CG is actually equal to the line GH, which expresses the velocity of a particle in C. Therefore CA will in like manner express the velocity of the particle A. If A express its quantity of matter, A·CA will express its quantity of motion, and will represent the force which would produce it by acting uniformly during the moment of time. 15

We expressed the external moving force by *m*.GI. part of it is employed in exciting the force A·CA, which urges the particle A. In order to discover what part of the external force is necessary for this purpose, draw CP perpendicular to FP. The preceding observations show us, that the force wanted at A is equal to the force which, when applied at P in the direction FP, would balance the force A·CA applied to A in the direction LA. Therefore (by the property of the lever ACP, which is impelled at right angles at A and P) we must have CP to CA as the force A·CA to the balancing pressure, which must be exerted at P, or at any point in the line FP. This pressure is therefore $\frac{A\cdot CA\cdot CA}{CP}$ or $\frac{A\cdot CA^2}{CP}$. As we took *m*.GI for the measure of the whole external force, GI being the velocity which it would communicate to the whole body moving in free space, we may take G*i* for the velocity which would be communicated to the whole body by the pressure $\frac{A\cdot CA^2}{CP}$, and then this pressure will be properly expressed by *m*G*i*. In like manner *m*.*ik* may express the portion of the external force employed in communicating to another particle B the motion which it acquires; and so on with respect to all the particles of the body. 16

It must be desirable to see the manner in which the

(A) We take this term in its usual sense, as expressing that point where the sum of the *equal* gravitations of each particle may be supposed united. It is by no means (though commonly supposed) the point where the equivalent of the real gravitations of the particles may be supposed to act, and to produce the same motion as when acting on each particle separately. It is this point only when all the particles gravitate alike, and in parallel directions. If the body were near the centre of the earth for instance, the gravitations of the different particles would neither be nearly equal nor in parallel lines; and the place of its real centre of gravity, on which the equivalent of its whole gravitation may be supposed to act, would be very different from G. Were we to denominate the point G, as usually determined, by its mathematical properties, we would call it the CENTRE OF POSITION; because its distance from any plane, or its position with respect to any plane, is the average distance and position of all the particles. The true designation of G is "the point through which if *any plane whatever* be made pass, and if perpendiculars to this plane be drawn from every particle, the sum of all the perpendiculars on one side of this plane is equal to the sum of all the perpendiculars on the other side."

If we were to denominate G by its mechanical properties, we would call it the CENTRE OF INERTIA; for this is equal in every particle, and in the same direction: and it is not in consequence of gravity, but of inertia, that the body describes with the point G a line parallel to FP. We wish this remark to be kept in mind.

Rotation. forces are really concerned in giving motion to the different particles.

Suppose the external force to act immediately on the external particle F. The line FC connecting this particle with the axis in C is either ſtretched or compreſſed by the effort of giving motion to a remote particle A. It is plain that, in the circumſtances repreſented in the figure, the line FC is compreſſed, and the axis is puſhed by it againſt its ſupports in the direction C*c*; and the body must, on this account, reſt in the oppoſite direction F*f*. The particle A is dragged out of its poſition, and made to begin its motion in the direction AL perpendicular to AC. This cannot be, unleſs by the connection of the two lines AC, AF. A reſiſts by its inertia, and therefore both AC and AF are ſtretched by dragging it into motion. By this reſiſtance the line AC tends to contract itſelf again, and it pulls C in the direction C*c*, and A in the direction A*a*; and if we take C*c* to repreſent the action on C, A*a* muſt be taken equal to it. In like manner AF is ſtretched and tends to contract, pulling F in the direction Fφ and A in the direction Aα with equal forces. Thus the particle A is pulled in the directions A*a* and Aα; the particle F is pulled in the direction Fφ, and puſhed in the direction F*f*; and C is pulled in the direction C*c*, and puſhed in the direction Cγ. A*a* and Aα have produced their equivalent AL, by which A is dragged into motion; F*f* and Fφ produce their equivalent F*g* by which the external force is reſiſted, and F*g* is equal and oppoſite to *m* . G*i*; the forces Cγ and C*c* produce their equivalent C*d* by which the axis is preſſed on its ſupports, and this is reſiſted by an equal and oppoſite reaction of the ſupports in the direction *d* C. The forces therefore which excite in the body the motion A.AL are both external, viz. the impelling force *g* F, and the ſupporting force *d* C. AL therefore is not only the immediate equivalent of A*a* and Aα, but alſo the remote equivalent of *g* F and *d* C. We may therefore aſcertain the proportion of *g* F (that is, of *m* . G*i*) to AL (that is, of A.AC), independent of the property of the lever. *g*F is to AL in the ratio compounded of the ratios of *g*F to Fφ or Aα, and of Aα to AL. But we ſhall obtain it more eaſily by conſidering *g* F as the equivalent of AL and *d*C. By what has been demonſtrated above, the directions, of the three forces *g* F, AL, and *d*C muſt meet in one point E, and *g* F muſt be equal to the diagonal *t* E of the parallelogram E *e t* ϵ, of which the ſides E *e*, Eϵ are reſpectively equal to AL and *d*C. Now *t* E is to Eϵ as the ſine of the angle *t* ϵ E to the ſine of the angle E *t* ϵ, that is, as the ſine of CEA to the ſine of CEP, that is, as CA to CP, as we have already demonſtrated by the property of the lever. We preferred that demonſtration as the ſhorteſt, and as abundantly familiar, and as congenial with the general mechaniſm of rotatory motions. And the intelligent reader will obſerve, that this other demonſtration is nothing but the demonſtration by the lever expanded into its own elements. Having once made all our readers ſenſible of this internal proceſs of the excitement and operation of the forces which connect the particles, we ſhall not again have recourſe to it. Rotation.

It is evident that the ſum of all the forces *g* F, or *m* . G*i*, muſt be equal to the whole moving force *m* . GI. that *m* . P*p* may be = *m* . GI. That is, we muſt have *m*. GI $= \int \frac{A.CA^2}{CP}$; or, becauſe CP is given when the poſition of the line FP is given, we muſt have *m* . GI $= \frac{\int A.CA^2}{CP}$, where both A and CA are variable quantities. 17

This equation gives us *m* . GI.CP $= \int$ A.CA^2. Now we learn in mechanics that the energy of any force applied to a lever, or its power of producing a motion round the fulcrum, in oppoſition to any reſiſtance whatever, is expreſſed by the product of the force by the perpendicular drawn from the fulcrum on the line of its direction. Therefore we may call *m* . GI.CP the momentum (B), energy, or rotatory effort, of the force *m* . GI. And in like manner $\int$ A.CA^2 is the ſum of the momenta of all the particles of the body in actual rotation; and as this rotation required the momentum *m* . GI.CP to produce it, this momentum balances, and therefore may expreſs the energy of all the reſiſtances made by the inertia of the particles to this motion of rotation. Or $\int$ A.CA^2 may expreſs it. Or, take ϕ to repreſent the quantity of matter in any particle, and *r* to repreſent its radius vector, or diſtance from the axis of rotation, $\int \phi . r^2$ will expreſs the momentum of inertia, and the equilibrium between the momentum of the external force *m* . G I, acting in the direction FP, and the combined momenta of the inertia of all the particles of the whirling body, is expreſſed by the equation *m* . G I . CP $= \int$ A . CA^2, $= \int \phi r^2$. The uſual way of ſtudying elementary mechanics gives us the habit of aſſociating the word equilibrium with a ſtate of reſt; and this has made our knowledge ſo imperfect. But there is the ſame equilibrium of the actual immediate preſſures when motion enſues from the action. When a weight A deſcending raiſes a ſmaller weight B by means of a thread paſſing over a pulley, the thread is equally ſtretched between the acting and reſiſting weights. The ſtrain on this thread is undoubtedly the immediate moving force acting on B, and the immediate reſiſting force acting on A. 18

The ſame equation gives us GI $= \frac{\int \phi . r^2}{m . CP}$. 19

Now GI : CG $= \frac{\int \phi . r^2}{m . CP}$: CG, $= \int \phi . r^2 : m$. CP . CG; but CG repreſents the velocity of the centre. Hence we derive this fundamental propoſition $\int \phi . r^2 : m$

(B) The word *momentum* is very careleſsly uſed by our mechanical writers. It is frequently employed to expreſs the product of the quantity of matter and velocity, that is, the quantity of motion; and it is alſo uſed (with ſtrict propriety of language) to expreſs the power, energy, or efficacy of a force to produce motion in the circumſtances in which it acts. We wiſh to confine it to this uſe alone. Sir Iſaac Newton adhered rigidly to this employment of the term (indeed no man exceeds him in preciſion of expreſſion), even when he uſed it to expreſs the quantity of motion: for in theſe inſtances the energy of this quantity of motion, as modified by the circumſtances of its action, was always in the ratio of the quantity of motion.

Rotation. $: m . CP . CG = GI : CG$; or, that $\int . \rho . r^2$ is to $m . CP . CG$ as the velocity of the body moving freely to the velocity of the centre of gravity round the axis of rotation.

20 Therefore the velocity of the centre is $= \frac{m . GI . CP . CG}{\int \rho . r^2}$.

21 The velocity of any point B is $= \frac{m . GI . CP . CB}{\int \rho r^2}$.

This fraction repreſents the length of the arch deſcribed by the point B in the ſame time that the body unconnected with any fixed points would have deſcribed GI.

22 Therefore the angular velocity (the arch divided by the radius) common to the whole body is $= \frac{m . GI . CP}{\int \rho r^2}$.

It may be here aſked, how this fraction can expreſs an angle? It evidently expreſſes a number; for both the numerator and denominator are of the ſame dimenſions, namely, ſurfaces. It therefore expreſſes the portion of the radius which is equal to the arch meaſuring the angle, ſuch as $\frac{1}{2}$, $\frac{1}{3}$, $\frac{5}{4}$, &c. And to have this angle in degrees, we have only to recollect that the radius is $= 57,2958$.

23 This angular velocity will be a maximum when the axis of rotation paſſes through the centre of gravity G. For draw from any particle A the line A a' perpendicular to CG, and join AG. Then $CA^2 = GA^2 + CG^2 \mathrel{=\!=} 2 CG \times G a$. Therefore $\int CA^2 = \int GA^2 + \int CG^2 \mathrel{=\!=} \int 2 CG \times G a, = \int GA^2 + m . CG^2 \mathrel{=\!=} \int 2 CG \times G a$. But, by the nature of the centre of gravity, the ſum of all the $+ G a$ is equal to that of all the $- G a$; and therefore $\mathrel{=\!=} \int 2 GC \times G a$ is nothing; and therefore $\int CA^2 = \int GA^2 + m . CG^2$. Therefore $\int CA^2$ or $\int \rho r^2$ is ſmalleſt, and $\frac{m . GI . CP}{\int \rho r^2}$ is greateſt when $m . CG^2$ is nothing, or when CG is nothing; that is, when C and G coincide.

24 The abſolute quantity of motion in the whirling body, or the ſum of the motions of all its particles, is $\frac{m . GI . CP . \int \rho . r}{\int \rho r^2}$. For the motion of each particle is $\frac{m . GI . CP . \rho r^2}{\int \rho r^2}$.

25 Ratio of the reſiſtance of a quantity of matter to a motion of rotation. The reſiſtance which a given quantity of matter makes to a motion of rotation is proportional to $\int \rho r^2$. For this muſt be meaſured by the forces which muſt be ſimilarly applied in order to give it the ſame angular motion or angular velocity. Thus let one external force be $m . GI$, and the other $m . \gamma \iota$.—Let both be applied at the diſtance CP. Let r be the radius vector in the one body, and ρ in the other; now the angular velocities $\frac{m . GI . CP}{\int \rho r^2}$ and $\frac{m . \gamma \iota . CP}{\int \rho \rho^2}$ are equal by ſuppoſition. Therefore $m . GI : m . \gamma \iota = \int \rho r^2 : \int \rho \rho^2$.

As in the communication of motion to bodies in free ſpace a given force always produces the ſame quantity of motion; ſo in the communication of motion to bodies obliged to turn round axes, a given force, applied at a given diſtance from the axes, always produces the ſame quantity of momentum. Whence it may eaſily be deduced (and we ſhall do it afterwards), that as in the communication of motion among free bodies the ſame quantity of motion is preſerved, ſo in the communication of motion among whirling bodies the ſame quantity of whirling motion is preſerved. Rotation.

This is a propoſition of the utmoſt importance in practical mechanics, and may indeed be conſidered as the fundamental propoſition with reſpect to all machines of the rotatory kind when performing work; that is, of all machines which derive their efficacy from levers or wheels. There is a valuable ſet of experiments by Mr Smeaton in the Philoſophical Tranſactions, Volume LXVI. which fully confirm it. We ſhall give an example by and by of the utility of the propoſition, ſhowing how exceedingly imperfect the uſual theories of mechanics are which do not proceed on this principle.

With reſpect to the general propoſition from which all theſe deductions have been made, we muſt obſerve, that the demonſtration is not reſtricted to the time neceſſary for cauſing each particle to deſcribe an arch equal to the radius vector. We aſſumed the radius vector as the meaſure of the velocity merely to ſimplify the notation. Both the progreſſive motion of the free body and the rotation of the whirling body are uniformly accelerated when we ſuppoſe the external force to act uniformly during any time whatever; and the ſpaces deſcribed by each motion in the ſame time are in a conſtant ratio. The formulæ may therefore with equal propriety repreſent the momentary accelerations in the different caſes. 26

It muſt alſo be obſerved, that it is not neceſſary to ſuppoſe that all the particles of the body are in one plane, and that the moving force acts in a line FP lying alſo in this plane. This was tacitly allowed, merely to make the preſent inveſtigation (which is addreſſed chiefly to the practical mechanic) more familiar and eaſy. The equilibrium between the force $A \times CA$, which is immediately urging the particle A, and the force $m . Gi$ employed at P or F, in order to excite that force at A would have been preciſely the ſame although the lines AC and FP had been in different planes, provided only that theſe planes were parallel. This is known to every perſon in the leaſt acquainted with the wheel and axle. But if the external moving force does not act in a plane parallel to the circles of rotation of the different particles, it muſt be reſolved into two forces, one of which is perpendicular to theſe planes, or parallel to the axis of rotation, and the other lying in a plane of rotation. And it is this laſt only that we conſider as the moving force; the other tends merely to puſh the body in the direction of its axis, but has no tendency to turn it round that axis. When we come to conſider the rotation of a body perfectly free, it will be neceſſary to attend particularly to this circumſtance. But there are ſeveral important mechanical propoſitions which do not require this. 27 All the particles of a body not neceſſarily ſuppoſed in one plane.

The motion of any body is eſtimated by that of its centre of gravity, as is well known. The difference between the motion of the centre of a free body and the motion of the centre of a body turning round an axis, is evidently owing to the connection which the parts of the body have with this axis, and to the action of the points of ſupport on this axis. This action muſt be conſidered as another *external* force, combined with that which acts on the particle P, and therefore muſt be ſuch as, if combined with it, would produce the very motion which we obſerve. That is, if 28 The motion of a body eſtimated by that of its centre of gravity, &c.

Rotation. we suppose the body unconnected with any fixed points, but as having its axis acted on by the same forces which these points exert, the body would turn as we observe it to do, the axis remaining at rest.

29 Therefore join I and H, and complete the parallelogram GIHK. It is plain that m. GK must represent the forces exerted by the axis on the fixed points.

30 If therefore GI should coincide with GH, and the point I with the point H, the force GK vanishes, and the body *begins* to turn round C, without exerting any pressure on the points of support; and the initial motion is the same as if the body were free. Or, the axis at C is then a *spontaneous* axis of conversion.

That this may be the case, it is necessary, in the first place, that the external force act in a direction perpendicular to CG; for GI is always parallel to FP: it being a leading proposition in dynamics, that when a moving force acts on any part whatever of a solid body, unconnected with fixed points, the centre of gravity will proceed in a straight line parallel to the direction of that force. In the next place GH must be equal to GI; that is, (n° 21) $\frac{m.GI.CP.CG}{\int p r^2}$ is equal to GI, or $\frac{m.CP.CG}{\int p r^2} = 1$, and $CP = \frac{\int p r^2}{m.CG}$.

31 The equation $CP = \frac{\int p r^2}{m.CG}$ gives us m . CG . CP $= \int p r^2$, $= \int A$. CA^2. But it was shown (n° 23), that $\int A$. $CA^2 = \int A$. $GA^2 + m$. CG^2. Therefore $\int A$. $GA^2 = m$. CG . CP $- m$. CG . CG, $= m$. CG CP $-$ CG), $= m$. CG . GP. Therefore we have (for another determination of the point of impulse P so as to annihilate all pressure on the axis) $GP = \frac{\int A . GA^2}{m . CG}$. This is generally the most easily obtained, the mathematical situation of the centre of gravity being well known.

32 *N. B.* When $CP = \frac{\int p r^2}{m.CG}$, we shall always have the *velocity* of the centre the same as if the body were free, but there will always be a pressure on the points of support, unless FP be also perpendicular to CG. In other positions of FP the pressure on the axis, or on its points of support, will be m . GI $\times$ 2 sin. GCP.

33 Advantage of annihilating or diminishing the pressure on the supports of the axis of motion,

It would be a desirable thing in our machines which, derive their efficacy from a rotatory motion, to apply the pressures arising from the power and from the resistance opposed by the work in such a manner as to annihilate or diminish this pressure on the supports of the axis of motion. Attention to this theorem will point out what may be done; and it is at all times proper, nay necessary, to know what are the pressures in the points of support. If we are ignorant of this, we shall run the risk of our machine failing in those parts; and our anxiety to prevent this will make us load it with needless and ill disposed strength. In the ordinary theories of machines, deduced entirely from the principles of equilibrium, the pressure on the points of support (exclusive of what proceeds from the weight of the machine itself) is stated as the same as if the moving and resisting forces were applied immediately to these points in their own directions. But this is in all cases erroneous; and, in cases of swift motions, it is greatly so. We may be convinced of this by a very simple instance. Suppose a line laid over a pulley, and a pound weight at one end of it, and ten pounds at the other; the pressure of the axis on its support is eleven pounds, according to the usual rule; whereas we shall find it only $3\frac{1}{11}$. For, if we call the radius of the pully 1, the momentum of the moving force is $10 \times 1 - 1 \times 1$, $= 9$; and the momentum of inertia is $10 \times 1^2 + 1 \times 1^2$ (n° 18.) $= 11$. Therefore the angular velocity is $\frac{9}{11}$. But the distance CG of the centre of gravity from the axis of motion is also $\frac{9}{11}$, because we may suppose the two weights in contact with the circumference of the pulley. Therefore the velocity of the centre of gravity is $\frac{9}{11}$, $\times \frac{9}{11}$, $= \frac{81}{121}$ of its natural velocity. It is therefore diminished $\frac{40}{121}$ by the figure of the axis of the pulley, and the 11 pounds press it with $\frac{40}{121}$ of their weight that is, with $3\frac{1}{11}$ pounds.

Rotation.

34 Of knowing the momentum of inertia;

Since all our machines consist of inert matter, which requires force to put it in motion, or to stop it, or to change its motion, it is plain that some of our natural power is expended in producing this effect; and since the principles of equilibrium only state the proportion between the power and resistance which will preserve the machine at rest, our knowledge of the actual performance of a machine is imperfect, unless we know how much of our power is thus employed. It is only the remainder which can be stated in opposition to the resistance opposed by the work. This renders it proper to give some general propositions, which enable us to compute this with ease.

35 And consequently the force necessary to overcome it.

It would be very convenient, for instance, to know some point in which we might suppose the whole rotatory part of the machine concentrated; because then we could at once tell what the momentum of its inertia is, and what force we must apply to the impelled point of the machine, in order to move it with the desired velocity.

Let S, fig. 3. be this point of a body turning round the supported axis passing through C; that is, let S be such a point, that if all the matter of the body were collected there, a force applied at P will produce the same angular velocity as it would if applied at the same point of the body having its natural form.

The whole matter being collected at S, the expression $\frac{m.GI.CP}{\int p r^2}$ of the angular velocity becomes $\frac{m.GI.CP}{m.CS^2}$ (n° 22.); and these are equal by supposition. Therefore $\int p r^2 = m$. CS^2, and $CS = \sqrt{\frac{\int p r^2}{m}}$.

This point S has been called the CENTRE of GYRATION.

In a line or slender rod, such as a working beam, or the spoke of a wheel in a machine, CS is $\sqrt{\frac{1}{3}}$ of its length.

In a circle or cylinder, such as the solid drum of a capstan, CS $= \sqrt{\frac{1}{2}}$ its radius, or nearly $\frac{7}{10}$. But if it turns round one of its diameters, CS $= \frac{1}{2}$ radius.

In the periphery of a circle, or rim of a wheel, CS, $=$ radius nearly.

If it turn round a diameter, CS $= \sqrt{\frac{1}{2}}$ radius. The surface of a sphere, or a thin spherical shell, turning round a diameter, has CS $= \sqrt{\frac{2}{3}}$ radius, or nearly $\frac{4}{5}$ or $\frac{5}{6}$.

A solid sphere turning round a diameter has CS $= \sqrt{\frac{2}{5}}$ radius, or nearly $\frac{7}{10}$. This is useful in the problem

Rotation.

blem of the preceſſion of the equinoxes. We may obſerve by the way, that if we conſider the whirling body as a ſyſtem of ſeveral bodies with rigid or inflexible connections, we may conſider all the matter of each of theſe bodies as united in its centre of gyration, and the rotation of the whole will be the ſame; for this does not change the value of $\frac{\int p r^2}{m}$.

36 A ſimpler mode of allowing for the inertia of machines.

There is another way of making this correction of the motion of a machine, or allowing for the inertia of the machine itſelf, which is rather ſimpler than the one now given. We can ſuppoſe a quantity of matter collected at the point to which the moving force is applied, ſuch that its inertia will oppoſe the ſame reſiſtance to rotation that the machine does in its natural form. Suppoſe the moving force applied at P, as before, and that inſtead of the natural form of the body a quantity of matter $= \frac{\int p r^2}{CP}$, collected at P; the moving force will produce the ſame angular velocity as on the body, in its natural form. For the angular velocity in this caſe muſt be $\frac{m \cdot GI \cdot CP}{\frac{\int p r^2}{CP^2} \cdot CP^2}$ (n°22.), which is $= \frac{m \cdot GI \cdot CP}{\int p r^2}$, the ſame as before.

37 Centre of oſcillation.

A point O may be found, at ſuch a diſtance from the axis, that if all the matter of the body were collected there, and an external force $m \cdot GI$ applied to it in a direction perpendicular or any how inclined to CO, it will produce the ſame angular velocity as when applied to the centre of gravity G, with the ſame inclination to the line CG.

In this caſe, the angular velocity muſt be $\frac{m \cdot GI \cdot CO}{m \cdot CO^2}$, (n° 22.), which is $= \frac{GI}{CO}$. This muſt be equal (by ſuppoſition) to the angular velocity where the ſame force $m \cdot GI$ is applied in the ſame inclination to G.—The angular velocity in this caſe muſt be $\frac{m \cdot GI \cdot CG}{\int p r^2}$.

38 Therefore we have $\frac{GI}{CO} = \frac{m \cdot GI \cdot CG}{\int p r^2}$, and $\frac{CO}{GI} = \frac{\int p r^2}{m \cdot GI \cdot CG}$, and $CO = \frac{\int p r^2}{m \cdot CG}$. Alſo, as in n° 31. $GO = \frac{\int A \cdot GA^2}{m \cdot CG}$.

This point O has ſeveral remarkable properties.

39 Remarkable properties of it.

In the firſt place, it is the point of a common heavy body ſwinging round C by its gravity, where, if all its weight be ſuppoſed to be concentrated, it will perform its oſcillations in the ſame time. For while the body has its natural form, the whole force of gravity may be ſuppoſed to be exerted on its centre of gravity. When the matter of the body is collected at O, the force of gravity is concentrated there alſo; and if CG have the ſame inclination to the horizon in the firſt caſe that CO has in the ſecond, the action of gravity will be applied in the ſame angle of inclination, and the two bodies will acquire the ſame angular velocity; that is, they will deſcend from this ſituation to the vertical ſituation (that is, through an equal angle) in the ſame time. Theſe two bodies will therefore oſcillate in equal times. For this reaſon, the point O ſo taken in the line CG, which is the radius vector of the centre of inertia, that CO is equal to $\frac{\int A \cdot CA^2}{m \cdot CG}$, or $GO = \frac{\int A \cdot GA^2}{m \cdot CG}$, is called the CENTRE of OSCILLATION of the body; and a heavy point ſuſpended by a thread of the length CO is called its *equivalent* or *ſynchronous pendulum*, or the *ſimple pendulum*, corresponding to the body itſelf, which is conſidered as a *compound pendulum*, or as conſiſting of a number of ſimple pendulums, which by their rigid connection diſturb each other's motions. Rotation.

That CO may be the equivalent pendulum, and O the centre of oſcillation, O muſt be in the line CG, otherwiſe it would not reſt in the ſame poſition with the body, when no force was keeping it out of its vertical poſition. The equation $CO = \frac{\int A \cdot CA^2}{m \cdot CG}$ only determines the diſtance of the centre of oſcillation from the centre of ſuſpenſion, or the length of the equivalent ſimple pendulum but does not determine the preciſe point of the body occupied by the centre of oſcillation; a circumſtance alſo neceſſary in ſome caſes.

40 Mode of determining its ſituation.

Mathematicians have determined the ſituation of this point in many caſes of frequent occurrence. Huyghens, in his *Horologium Oſcillatorium*, and all the beſt writers of treatiſes of mechanics, have given the method of inveſtigation at length. The general proceſs is, to multiply every particle by the ſquare of its diſtance from the axis of ſuſpenſion, and to divide the ſum of all theſe products by the product of the whole quantity of matter multiplied by the diſtance of its centre of gravity from the ſame axis. The quotient is the diſtance of the centre of oſcillation, or the length of the equivalent ſimple pendulum: for $CO = \frac{\int p \cdot r^2}{m \cdot CG}$.

a. If the body is a heavy ſtraight line, ſuſpended by one extremity, CO is $\frac{2}{3}$ of its length.

b. This is nearly the caſe of a ſlender rod of a cylindrical or priſmatic ſhape. It would be exactly ſo if all the points of a tranſverſe ſection were equally diſtant from the axis of ſuſpenſion.

c. If the pendulum is an iſoſceles triangle ſuſpended by its apex, and vibrating perpendicularly to its own plane, CO is $\frac{3}{4}$ of its height.

d. This is nearly true of a very ſlender triangle (that is, whoſe height many times exceeds its baſe) ſwinging round its vertex in any direction.

e. In a very ſlender cone or pyramid ſwinging from its vertex CO, is $\frac{4}{5}$ of its height nearly.

f. If a ſphere, of which r is the radius, be ſuſpended by a thread whoſe weight may be neglected, and whoſe length is l, the diſtance between its centre of ſuſpenſion and centres of oſcillation is $a + r + \frac{2}{5}\frac{r^2}{a+r}$; and the diſtance between its centers of bulk and oſcillation is $\frac{2}{5}\frac{r}{a+r}$. Thus, in a common ſecond's pendulum, whoſe length at London is about $39\frac{1}{3}$ inches, the centre of oſcillation will be found about $\frac{1}{100}$ of an inch below the centre of the ball, if it be two inches in diameter.

g. If the weight of the thread is to be taken into the account, we have the following diſtance between the centre of the ball and that of oſcillation, where B is the weight of the ball, a the diſtance of the point

of ſuſpenſion and to centre, d the diameter of the ball, and a the weight of the thread or rod, $GO = \frac{(\frac{1}{2}+\frac{1}{3}B)\frac{d^2}{4}+\frac{1}{3}a(x^2+x'^2)}{(1+B)x-\frac{1}{2}a}$; or, if we conſider the weight of the thread as an unit, and the weight of the ball as its multiple (or as expreſſed by the number of times it contains the weight of the thread), $GO = \frac{\frac{1}{8}d^2+\frac{1}{3}}{B+\frac{1}{2}}x$.

41 As the point O, determined as above, by making $CO = \frac{\int p.r^2}{m.CG}$, is the centre of oſcillation of the body turning round C, ſo C is the centre of oſcillation of the ſame body turning round O: for, reſuming A.CA in place of p, we have $\int A.CA^2 = m.CO.CG$. Now $\int A.CA^2 = \int A.OA^2 + \int A.OC^2 - \int A.OC.\ 2\ O\acute{a}$, (Euclid. II. 12. 13.), or $m.CO.CG = \int A.OA^2 + \int A.OC^2 - \int A.OC.\ 2O\acute{a}$. But $\int A.OC^2 = m.OC^2, = m.OC.OC$; and (by the nature of the centre of gravity) $\int A.OC.\ 2O\acute{a} = m.OC.\ 2OG$. Therefore we have $m.CO.CG = \int A.OA^2 + m.OC.OC - m.OC.\ 2OG$; and $\int A.OA^2 = m.OC.CG + m.CO.\ 2OG - mCO.CO$, $= m.CO\ (CG + 2OG - CO)$. But $CG + 2OG$ is equal to $CO + OG$, and $CG + 2OG - CO$ is equal to OG. Therefore $\int A.OA^2 = m.CO.OG$, and $CO = \frac{\int A.OA^2}{m.OG}$, which is all that is wanted (according to n° 39.) to make C the centre of oſcillation when O is the centre of ſuſpenſion.

42 If the point of ſuſpenſion, or axis of rotation, be anywhere in the circumference of a circle of which G is the centre, the point O will be in the circumference of another circle of which G is the centre: for, by n° 38. $GO = \frac{S.A.GA^2}{m.CG}$. Now $\int A.GA^2$ is a fixed quantity; and therefore while CG is conſtant, OG will alſo be conſtant.

43 We may alſo obſerve that the diſtance of the axis from the centre S of gyration is a mean proportional between its diſtance from the centre G of gravity and the centre O of oſcillation: for we had (n° .) $CS^2 = \frac{\int p.r^2}{m.}$, and $CO = \frac{\int p.r^2}{m.CG}$, and therefore $CO.CG = \frac{\int p.r^2}{m.} = CS^2$ and $CO : CS = CS : CG$.

44 We ſee alſo that the diſtance CO is that at which an external force muſt be applied; ſo that there may not be any preſſure excited in the axis upon its points of ſupport, and the axis may be a ſpontaneous axis of converſion. This we learn, by comparing the value of CO with that of CP in art. 30. This being the caſe, it follows, that if an external force is applied in a direction paſſing thro' O, perpendicular to CO, it will produce the ſame initial velocity of the centre as if the body were free: for as it exerts no preſſure on the points of ſupport, the initial motion muſt be the ſame as if they were not there.

45 If the external force be applied at a greater diſtance in the line CG, the velocity of the centre will be greater than if the body were free. In this caſe the preſſure excited in the axis will be backward, and conſequently the points of ſupport will re-act forward, and this re-action will be equivalent to another external force conſpiring with the one applied at O. Some curious conſequences may be deduced from this.

Rotation. 46 Why this point is ſometimes called the centre of percuſſion.

If the external force be applied to a point in the line GC, lying beyond C, the motion of the centre will be in the oppoſite direction to what it would have taken had the body been free, and ſo will be the preſſures exerted by the points of ſupport on the axis.

A force $m.GI$ applied at P produces the initial progreſſive motion $m.GH$; and any force applied at O, perpendicular to CG, produces the ſame motion of the centre as if the body were free. Therefore a force $m.GH$ applied thus at O will produce a motion $m.GH$ in the centre, and therefore the ſame motion which $m.GI$ applied at P would produce; and it will produce the momentum $m.GI$ at P. Therefore if a force equal to the progreſſive motion of the body be applied at O, perpendicularly to CO, in the oppoſite direction, it will ſtop all this motion without exciting any ſtrain on the axis or points of ſupports. Therefore the equivalent of all the motions of each particle round C is conceived as paſſing through O in a direction perpendicular to CO; and the blow given by that point to any body oppoſed to its motion is conſidered as equal to the compounded effect of the rotatory motion, or to the progreſſive motion of the body combined with its rotation. 47

48 Impropriety of the term.

For ſuch reaſons O has been called the CENTRE OF PERCUSSION of the body turning round C. But the name of *centre of momentum*, or *rotatory effort*, would have been more proper.

We can feel this property of the point O when we give a ſmart blow with a ſtick. If we give it a motion round the joint of the wriſt only, and ſtrike ſmartly with a point conſiderably nearer or more remote than $\frac{2}{3}$ of its length, we feel a painful ſhock or wrench in the hand; but if we ſtrike with that point which is preciſely at $\frac{2}{3}$ of its length, we feel no ſuch diſagreeable ſtrain.

49 Mechanical writers frequently ſay, that O conſidered as the centre of percuſſion, is that with which the moſt violent blow is ſtruck. But this is by no means true; O is that point of a body turning round C which gives a blow preciſely equal to the progreſſive motion of the body, and in the ſame direction. As we have already ſaid, it is the point where we may ſuppoſe the whole rotatory momentum of the body accumulated. Every particle of the body is moving in a particular direction, with a velocity proportional to its diſtance from the axis of rotation; and if the body were ſtopped in any point, each particle tending to continue its motion endeavours to drag the reſt along with it. Whatever point we call the centre of percuſſion ſhould have this property, that when it is ſtopped by a ſufficient force, the whole motion and tendency to motion of every kind ſhould be ſtopped; ſo that if at that inſtant the ſupports of the axis were annihilated, the body would remain in abſolute reſt.

50 Centre of percuſſion, how defined.

The conſideration of a very ſimple caſe will ſhow that this point of ſtoppage cannot be taken indifferently. Suppoſe a ſquare or rectangular board CDD'C', fig. 4. advancing in the direction GH, perpendicular to its plane, without any rotation. Let G be the centre of gravity, and the middle of the board. It is evident, that if a force be applied at G, in the direction HG, and

Rotation. and equal to the quantity of motion of the board, all motion will be ſtopped: for when the point G is ſtopped, no reaſon can be aſſigned why one part of the board ſhall advance more than another. The ſame thing muſt happen if the board be ſtopped by a ſtraight edge put in its way, and paſſing through G: for example, in the line LGM, or $g\,G\,h$. But if this edge be ſo placed that the board ſhall meet it with the line IPK, then, becauſe this line does not divide it equally, and becauſe there is a greater quantity of motion in the part CIKC′ than in the part IDD′K, though the progreſſive motion may be ſtopped, the upper part will advance, and a motion of rotation will commence, of which IK will be the axis. Now ſuppoſe that the board, inſtead of having been moving along in the direction GH, every part with the ſame velocity had been ſwinging round the axis CC′ like a pendulum, from the poſition $C\,d\,d'\,C'$, and that it is ſtopped by a ſtraight edge meeting it in the line LGM parallel to CO′, in the moment that it has attained the vertical poſition CDD′C′; all its motion will not be ſtopped: for, although LGM divides the board equally, there is more motion in the lower part LDD′M than in the upper part CLMC′ becauſe every particle of the lower part is deſcribing larger circles and moving ſwifter. Therefore when the line LGM is ſtopped, there will be a *tendency* of the lower part to advance, and the pivots C and C′ of the axis will be preſſed backwards on their holes; and if the holes were at that inſtant removed, a rotation would commence, of which LM is the axis. The board muſt therefore be ſtopped in ſome line IPK below LGM, and ſo ſituated, that the ſum of all the momenta on each ſide of it ſhall be equal. This alone can hinder a rotation round the axis IPK. From what has been already demonſtrated, it appears, that this will be prevented if the edge meets the board in a line IPK paſſing through O the centre of oſcillation, which is ſituated in the line $g\,G\,h$ paſſing through the centre of gravity perpendicular to the axis CC′. This line IOK may therefore be called the *line* or *axis* of percuſſion.

51 But any point of this line will not do. It is evident that if the board ſhould meet the fixed edge in the line $g\,G\,O\,h$, all motion will be ſtopped, for the motions on each ſide are equal, and neither can prevail. But if it be ſtopped in the line $p\,P\,q$, there is more motion in the part $p\,q\,D'C'$ than in the part $p\,q\,DC$; and if the ſupports at C and C′ were that inſtant taken away, there would commence a rotation round the axis $p\,q$. Conſequently, if the body were not ſtopped by an edge, but by a ſimple point at P, this rotation would take place. The motions above and below P would indeed balance each other, but the motions on the right and left ſides of it would not. Therefore it is not enough for determining the centre of percuſſion that we have aſcertained its diſtance $g\,O$ from the axis of rotation by the equation $g\,O = \frac{\int p\,r^2}{m.g\,G}$. This equation only gives us the line IOK parallel to CC′, but not the point of percuſſion. This point (ſuppoſe it P) muſt be ſuch that if any line $p\,P\,q$ be drawn through it, and conſidered as an axis round which a rotation *may* commence, it *ſhall not* commence, becauſe the ſum of all the momenta round this axis on the right ſide is equal to the ſum of the momenta on the left. Let us inveſtigate in what manner this condition may be ſecured. Rotation.

Let there be a body in a ſtate of rotation round the 52
axis $D\,d$ (fig. 5.), and let G be its centre of gravity, and CGO a line through the centre of gravity perpendicular to the axis DC d. At the moment under conſideration, the centre of gravity is moving in the direction GH, perpendicular to the radius vector GC, as alſo perpendicular to a plane paſſing through the lines $D\,d$ and CG. Let O be the centre of oſcillation. Draw the line $n\,O$ parallel to $D\,d$. The centre of percuſſion muſt be ſomewhere in this line. For the point of percuſſion, wherever it is, muſt be moving in the ſame direction with the progreſſive motion of the body, that is, in a direction parallel to GH, that is, perpendicular to the plane DCG. And its diſtance from the axis $D\,d$ muſt be the ſame with that of the centre of oſcillation. Theſe conditions require it therefore to be in ſome point of $n\,O$. Suppoſe it at P. Draw $P\,p$ perpendicular to $D\,d$. P muſt be ſo ſituated, that all the momenta tending to produce a rotation round the line $p\,P$ may balance each other, or their ſum total be nothing.

Now let A be any particle of the body which is out of the plane DCG, in which lie all the lines CGO, $p\,P$, $n\,OP$, &c. Draw its radius vector $A\,a$ perpendicular to $D\,a$, and draw $a\,n$ parallel to CG, and therefore perpendicular to $D\,a$. The plane $A\,a\,n$ is perpendicular to the plane $D\,a\,n$ (Euclid, XI. 4). Draw AL perpendicular to $A\,a$, and $A\,l$ perpendicular to $a\,n$. Then, while the body is beginning to turn round $D\,d$, the incipient motion of the particle A is in the direction AL, perpendicular to its radius vector $A\,a$. This motion AL may be conſidered as compounded of the motion $A\,l$, perpendicular to the plane DCG, and the motion $l\,L$ in this plane. It is evident that it is $A\,l$ only which is oppoſed by the external force ſtopping the body at P, becauſe $A\,l$ alone makes any part of the progreſſive motion of the centre of gravity in the direction GH.

We have hitherto taken the *radii vectores* for the meaſures of the velocities or motions of the particles. Therefore the quantity of motion or the moving force of A is $A.Aa$, and this is exerted in the direction AL, and may be conceived as exerted on any point in this line, and therefore on the point L. That is, the point L might be conſidered as urged in this direction with the force $A.Aa$, or with the two forces of which the force $A.Aa$ is compounded. The force in the direction AL is to the force in the direction $A\,l$ as AL to $A\,l$, or as $a\,A$ to $a\,l$, becauſe the triangles $A\,l\,L$ and $a\,l\,A$ are ſimilar. Therefore, inſtead of ſuppoſing the point L urged by the force $A.Aa$, acting in the direction AL, we may ſuppoſe it impelled by the force $A.al$, acting perpendicularly to the line $A\,l$, or to the plane DCG, and by the force $A.Al$ acting in this place, viz. in the direction $L\,n$. This laſt force has nothing to do with the percuſſion at P. Therefore we need conſider the point L as only impelled by the force $A.Al$. The momentum of this force, or its power to urge the plane DCG forward in the direction GH, by turning it round $D\,d$, muſt be $A.al.aL$. (*N. B.* This is equal to $A.Aa^2$, becauſe $al : aA = aA : aL$, and $A.Aa^2$, has been ſhown long ago to be the general

Rotation. neral expreſſion of the rotatory momentum of a particle).

Draw L*m* perpendicular to P*p*. If we conſider P*p* as an axis about which a motion of rotation may be produced, it is plain that the momentum of the point L to produce ſuch a rotation will be A.*a*′.L*m*. In like manner, its momentum for producing a rotation round *n*P would be A.*al*.L*n*. In general, its momentum for producing rotation round any axis is equal to the product of the perpendicular force at L (that is, A.*a*′) and the diſtance of L from this axis.

In order therefore that P may be the centre of percuſſion, the ſum of all the forces A.*al*.L*m* muſt be equal to nothing; that is, the ſum of the forces A.*al*.L*m* on one ſide of this axis P*p* muſt be balanced by the ſum of forces A′.*a*′*l*′.L′*m* on the other ſide. To expreſs this in the uſual manner, we muſt have $\int A.al.n\mathrm{P} = 0$. But $n\mathrm{P} = n\mathrm{O} - \mathrm{OP}$. Therefore $\int A.al.n\mathrm{O} - \int A.al.\mathrm{OP} = 0$, and $\int A.al.n\mathrm{O} = \int A.al.\mathrm{OP}$. But OP is the ſame wherever the particle A is ſituated; and becauſe G is the centre of gravity, the ſum of all the quantities A.*al* is *m*.GC, *m* being the quantity of matter of the body; that is, $\int A.al = m.\mathrm{GC}$, and $\int A.al.\mathrm{OP} = m.\mathrm{GC}.\mathrm{OP}$, $= \int A.al.n\mathrm{O}$. Hence we derive the final equation

$$\mathrm{OP} = \frac{\int A.al.n\mathrm{O}}{m.\mathrm{GC}}.$$

53 Therefore the centre of percuſſion P of a body turning round the axis D*d* is determined by theſe conditions: 1ſt, It is in the plane DCG, paſſing through the axis and the centre of gravity; 2d, It is in a line *n*O paſſing through the centre of oſcillation, and parallel to the axis, and therefore its diſtance P*p* from the axis of rotation is $\frac{\int A \cdot A\,a^2}{m.\mathrm{CG}}$; and, 3d, Its diſtance OP from the centre of oſcillation is $\frac{\int A.al.n\mathrm{O}}{m.\mathrm{CG}}$.

54 How both centres coincide. In order therefore that the centres of oſcillation and percuſſion may coincide, or be one and the ſame, OP muſt vaniſh, or SA.*al*.*n*O muſt be equal to nothing, that is, the ſum of all the quantities A.*al*.*n*O on one ſide of the line CO muſt be equal to the ſum of all the quantities A′.*a*′*l*′.*n*′O on the other ſide.

55 Let D*d*δ▲ be a plane paſſing through the axis D*d* perpendicular to that other plane DCG through it, in which the centre of gravity is ſituated, and let C*g*γ*x* be a third plane paſſing through the centre of gravity perpendicular to both the planes D*d*δ▲ and DCG. Draw *l r* and *a* α perpendicular to *a*L, and *r* ά perpendicular to *cr*, and then draw A α, A ά perpendicular to *a* α and *r* ά. It is evident that A α and A ά are reſpectively equal to *al* and *lr*, or to *al* and *no*; ſo that the two factors or conſtituents of the momentum of a particle A round the centre of percuſſion are the diſtances of the particle from the planes D*d*δ▲ and *x*C*g*γ, both of which are perpendicular to that plane through the axis in which the centre of gravity is placed.

We may ſee, from theſe obſervations, that the centres of oſcillation and percuſſion do not neceſſarily coincide, and the circumſtance which is neceſſary for their coincidence, viz. that $\int A.A\,\alpha.A\,\acute{\alpha}$ is equal to O. It is of importance to keep this in mind.

56 Further conſiderations of importance. There occurs here another obſervation of great importance. Since every force is balanced by an equal force acting in the oppoſite direction, and ſince all motion progreſſive and rotatory is ſtopped by an external force applied at P in the direction *q*P, it follows that, if the body were at reſt, and the ſame force be applied there, it will ſet the body in rotation round the axis D*d*, in the oppoſite direction, with the ſame angular velocity, and without any preſſure on the pivots D and *d*. For whatever motion of the particle A, in the direction AL, was ſtopped by a part of the external force applied at P, the ſame motion will be produced by it in the quieſcent particle A in the oppoſite direction LA. And as the pivots D and *d* had no motion in the caſe of the body turning round them, they will acquire no motion, or will have no tendency to motion, or no preſſure will be exerted on them, in the laſt caſe. Therefore when an external force is applied at P in a direction perpendicular to the line P*p*, the line D*d* will become a momentary ſpontaneous axis of converſion, and the incipient motion of the body will perfectly reſemble the rotation of the ſame body round a fixed axis D*d*. Rotation.

57 There is another ſet of forces of which we have as yet taken no notice, viz. that part of each force AL which is directed along the plane DCG, and is repreſented by *l*L when the whole force is repreſented by AL, or by A*l* when the whole force is repreſented by A*a*. Theſe forces being all in the plane DCG, and in the direction CG or GC, can have no effect on the rotation round any axis in that plane. But they tend, ſeparately, to produce rotation round any axis paſſing through this plane perpendicularly. And the momentum of A to produce a rotation round an axis perpendicular to this plane, in O for inſtance, muſt evidently be A.A*l*.*n*O, and round P it muſt be A.A*l*.*n*P, &c. We ſhall have occaſion to conſider theſe afterwards.

58 Of balls and cylinders rolling down inclined planes. It is uſual in courſes of experimental philoſophy to illuſtrate the motions of bodies on inclined planes and curved ſurfaces by experiments with balls rolling down theſe ſurfaces. But the motions of ſuch rolling balls are by no means juſt repreſentations of the motions they repreſent. The ball not only goes down the inclined plane by the action of gravity, but it alſo turns round an axis. Force is neceſſary for producing this rotation; and as there is no other ſource but the weight of the ball, part of this weight is expended on the rotation, and the remainder only accelerates it down the plane. The point of the ball which reſts on the plane is hindered from ſliding down by friction; and therefore the ball tumbles, as it were, over this point of contact, and is inſtantly catched by another point of contact, over which it tumbles in the ſame manner. A cylinder rolls down in the very ſame way; and its motion is nearly the ſame as if a fine thread had been lapped round it, and one end of it made faſt at the head of the inclined plane. The cylinder rolls down by unwinding this thread.

59 Mechaniſm of theſe motions. The mechaniſm of all ſuch motions (and ſome of them are important) may be underſtood by conſidering them as follows: Let a body of any ſhape be connected with a cylinder FCB (fig. 6.) whoſe axis paſſes through G the centre of gravity of the body. Suppoſe that body ſuſpended from a fixed point A by a thread wound round the cylinder. This body will deſcend by the action of gravity, and it will alſo turn round, unwinding the thread. Draw the horizontal line

Rotation. line OGC. It will pass through the point of contact C of the thread and cylinder, and C is the point round which it *begins* to turn in descending. Let O be its centre of oscillation corresponding to the momentary centre of rotation C. It will begin to descend in the same manner as if all its matter were collected in O: for it may be considered, in this instant, as a pendulum suspended at C. But in this case O will descend in the same manner as if the body were falling freely. Therefore the velocity of G (that is, the velocity of descent) will be to the velocity with which a heavy body would fall as CG to CO. Now since the points C, G, O, are always in a horizontal line, and the radius CG is given; as also CO (n° 48.) the velocity of a body falling freely, and of the body unwinding from this thread, will always be in the same proportion of CO to CG, and so will the spaces described in any given time. And thus we can compare their motions in every case when we know the place of the centre of oscillation.

60 *Cor.* 1. The weight of the descending body will be to the tension of the thread as CO to GO: for the tension of the thread is the difference between the momentum of the rolling body and that of the body falling freely.

Observe, that this proportion between the weight of the body and the tension of the thread will be always the same: for it has been demonstrated already, n° 42. that if C be in the circumference of a circle whose centre is G, O will be in the circumference of another circle round the same centre, and therefore the ratio of CG to CO is constant.

61 *Cor.* 2. If a circular body FCB roll down an inclined plane by unfolding a thread, or by friction which prevents all sliding, the space described will be to that which the body would describe freely as CG to CO: for the tendency down the inclined plane is a determined proportion of the weight of the body. The motion of rotation in these cases, both progressive and whirling, is uniformly accelerated.

62 Case of pendulous bodies. Something of the same kind obtains in common pendulous bodies. A ball hung by a thread not only oscillates, but also makes part of a rotation; and for this reason its oscillations differ from those of a heavy point hanging by the same thread, and the centre of oscillation is a little below the centre of the ball. A ball hung by a thread, and oscillating between cycloidal cheeks, does not oscillate like a body in a cycloid, because its centre of oscillation is continually shifting its place. Huyghens avoided this by suspending his pendulous body from two points, so that it did not change its attitude during its oscillation. If our spring-carriages were hung in this manner, having the four lower staples to which the straps are fixed as far asunder as the four upper staples at the ends of the springs, the body of the carriage would perform its oscillations without kicking up and down in the disagreeable manner they now do, by which we are frequently in danger of striking the glasses with our heads. The swings would indeed be greater, but incomparably easier; and we could hold things almost as steadily in our hand as if the carriage were not swinging at all.

This will suffice for an account of the rotation round fixed axes, as the foundation for a theory of machines actually performing work. The limits of our undertaking will not allow us to do any more than just point out the method of applying it. Rotation. 63 Method of applying this theory of rotation to practice.

Let there be any machine of the rotatory kind, *i. e.* composed of levers or wheels, and let its construction be such, that the velocity of the point to which the power is applied (which we shall call the *impelled point*) is to the velocity of the working point in the ratio of m to n. It is well known that the energy of this machine will be the same with that of an axis in peritrochio, of which the radii are m and n.

Let p express the actual pressure exerted on the impelled point by the moving power, and let r be the actual pressure or resistance exerted on the working point by the work to be performed. Let x be the inertia of the power, or the quantity of dead matter which must move with the velocity of the impelled point in order that the moving power may act. Thus the moving power may be *the weight* of a bucket of water in a water-wheel; then x is the quantity of matter in this bucket of water. Let y in like manner be the inertia of the work, or matter which must be moved with the velocity of the working-point, in order that the work may be performed. Thus y may be a quantity of water which must be continually pushed along a pipe. This is quite different from the weight of the water, though it is proportional to it, and may be measured by it.

Let f be a pressure giving the same resistance when applied at the working-point with the friction of the machine, and let an^2 be the momentum of the machine's inertia, viz. the same as if a proper quantity of matter a were attached to the working-point, or to any point at the same distance from the axis.

This state of things may be represented by the wheel and axle PQS (fig. 7.) where x and y and a are represented by weights acting by lines. P is the impelled point, and R the working-point; CP is m and CR is n. The moving force is represented by PA, the resistance by RB, and the friction by BF.

It is evident that the momentum of the inertia of x, y, and a are the same as if they were for a moment attached to the points P and R.

Hence we derive the following expressions,

64 Formulæ, and their use in practice.

1. The angular velocity $= \frac{pm - \overline{r + fn}}{xm^2 + y + an^2}$.

65

2. Velocity of the working-point $= \frac{pmn - \overline{r + fn}^2}{xm^2 + y + an^2}$.

66

3. Work performed $= \frac{pmnr - \overline{r + fn}^2 r}{xm^2 + y + an^2}$. For the work is proportional to the product of the resistance and the velocity with which it is overcome.

We shall give a very simple example of the utility of these formulæ. Let us suppose that water is to be raised in a bucket by the descent of a weight, and that the machine is a simple pulley. Such a machine is described by Desaguliers *, who says he found it preferable to all other machines. The bucket dipped itself in the cistern. A chain from it went over a pulley, and at its extremity was a stage on which a man could step from the head of a stair. His preponderance brought down the stage and raised the bucket, which discharged its water into another cistern. The man quitted the stage, and walked up stairs, and there he found it

* Exper. Phil. vol. ii. p. 503.

Rotation. it ready to receive him, because the empty bucket is made heavier than the empty stage.

Now, if there be no water in the bucket, it is evident, that although the motion of the machine will be the quickest possible, there will be no work performed. On the other hand, if the loaded stage and the full bucket are of equal weight, which is the usual statement of such a machine in elementary treatises of mechanics, the machine will stand still, and no work will be performed. In every intermediate state of things the machine will move, and work will be performed. Therefore the different values of the work performed must be a series of quantities which increase from nothing to a certain magnitude, and then diminish to nothing again. The maxim which is usually received as a fundamental proposition in mechanics, viz. that what is gained in force by the intervention of a machine is lost in time, is therefore false. There must be a particular proportion of the velocities of the impelled and working-points, which will give the greatest performance when the power and resistance are given; and there is a certain proportion of the power and resistance which will have the same effect when the structure of the machine has previously fixed the velocities of the impelled and working points.

67 This proportion will be found by treating the formula which expresses the work as a fluxionary quantity, and finding its maximum. Thus, when the ratio of the power and resistance is given, and we wish to know what must be the proportion of the velocities m and n, that we may construct the machine accordingly, we have only to consider n as the variable quantity in the third formula. This gives us

$$n = m \times \frac{\sqrt{x^2 \times \overline{r+f}^2 + p^2 x \overline{a+y}} - x\overline{r+f}}{pa+y}$$

68 This is a fundamental proposition in the theory of working machines: but the application requires much attention. Some natural powers are not accompanied by an inertia worth minding; in which case x may be omitted. Some works, in like manner, are not accompanied by any inertia; and this is a very general case. In many cases the work exerts no contrary strain on the machine at rest, and r is nothing. In most instances the intensity of the power varies with the velocity of the impelled point, and is diminished when this increases; the resistance or actual pressure at the working-point frequently increases with the velocity of the working-point. All these circumstances must be attended to; but still they only modify the general proposition. These are matters which do not come within the limits of the present article. We only took this opportunity of showing how imperfect is the theory of machines in equilibrio for giving us any knowledge of their performance or just principles of their construction.

69 Common mode of estimating external impulsions.

One thing, however, must be particularly attended to in this theory. The forces which are applied to the body moveable round an axis are considered in the theory as pressures actually exerted on the impelled points of the body or machine, as when a weight is appended to a lever or wheel and axle, and, by descending uniformly, acts with its whole weight. In this case the weight multiplied by its distance from the axis will always express its momentum, and the rotation will (*ceteris paribus*) be proportional to this product. But in many important cases our machines are actuated by external impulsions. A body in motion strikes on the impelled point of the machine, and causes it to turn round its axis. It is natural for us to consider the quantity of motion of this impelling body as the measure of our moving force. Supposing n to be its quantity of matter, and V its velocity, n V appears a very proper measure of its intensity. And if it be applied at the distance CP from the axis of rotation, nV·CP should express its energy, momentum, or power to turn the machine round C; and we should express the angular velocity by $\frac{n\text{V}\cdot\text{CP}}{\int p r^2}$. Accordingly, this is the manner in which calculations are usually made for the construction and performance of the machine, as may be seen in almost every treatise of mechanics. Rotation

70 Shown to be erroneous.

But nothing can be more erroneous, as we shall show by a very simple instance. It should result from these principles that the angular velocity will be proportional to CP. Let us suppose our moving power to be a stream of water moving at the rate of ten feet per second, and that every second there passes 100 pounds of water. We should then call our moving force 1000. It is evident, that if we suppose the arm of the float-board on which it strikes to be infinitely long, the impelled point can never move faster than 10 feet in a second, and this will make the angular velocity infinitely small, instead of being the greatest of all. The rotation will therefore certainly be greater if CP be shorter. We need not examine the case more minutely.

71 Distinction to be made between the quantity of motion and moving power of an impelling body.

We must therefore carefully distinguish between the quantity of motion of the impelling body and its moving power, as it is modified by its manner of acting. The moving power is the *pressure actually exerted* on the impelled point of the machine. Now the universal fact of the equality of action and reaction in the collision of bodies assures us, that their mutual pressure in their collision is measured by the *change* of motion which each sustains: for this change of motion is the only indication and measure of the pressure which we suppose to be its cause. A way therefore of ascertaining what is the real moving force on a machine actuated by the impulsion of a moving body, is to discover what quantity of motion is lost by the body or gained by the machine; for these are equal. Having discovered this, we may proceed according to the propositions of rotatory motion.

72 Therefore let AEF (fig. 8.) represent a body moveable round an axis passing through C, perpendicular to the plane of the figure. Let this body be struck in the point A by a body moving in the direction FA, and let BAD be a tangent to the two bodies in the point of collision. It is well known that the mutual actions of two solid bodies are always exerted in a direction perpendicular to the touching surfaces. Therefore the mutual pressure of the two bodies is in the direction AP perpendicular to AD. Therefore let the motion of the impelling body be resolved into the directions AP and AD. The force AD has no share in the pressure. Therefore let V be the velocity of the impelling body estimated in the direction AP, and let n be its quantity of matter. Its quantity of motion in the direction AP will be nV.

Did AP pass through C, it is evident that the only effect

Rotation. effect would be to press the axis on its supports. But AP, the direction of the pressure, being inclined to AC, the point A is forced aside, and in some small moment of time describes the little arch A a round the centre C. The point P will therefore describe a small arch P p, subtending an angle PCp=ACa. Draw $a o$ perpendicular to AP, and $a d$ perpendicular to AD. The triangles dAo, ACP are similar, and Aa : Ao= AC : CP. But the angles ACa, PCp being equal, the arches are as their radii, and Aa : Pp = AC : CP, =Aa : Ao; therefore ϕp = Ao.

Now since, in consequence of the impulse, A describes Aa in the moment of time, it is plain that Ao is the space through which the impelling body continues to advance in the direction of the pressure; and if V be taken equal to the space which is described in an equal moment before the stroke, v will express the remaining velocity, and V—v is the velocity lost, and n(V—v) is the quantity of motion lost by the impelling body, and is the true measure of the pressure exerted. This gives us the whole circumstances of the rotatory motion. The angular velocity will be $\frac{n(V-v)\cdot CP}{\int p r^2}$, and the velocity of the point A will be $\frac{n(V-v)\cdot CP\cdot CA}{\int p r^2}$. Call this velocity u. The similarity of triangles gives us CA : CP = Aa (or u) : Ao (or v) and $u = \frac{v.CA}{CP}$. Therefore $\frac{V\cdot CA}{CP} = \frac{n(V-v)CP.CA}{\int p r^2}$. From this we deduce $v = \frac{n.V.CP^2}{\int p r^2 + n.CP^2}$, and thus we have obtained the value of v in known quantities; for n was given, or supposed known; so also was V: and since the direction FA was given, its distance CP from the axis is given; and the form of the body being known, we can find the value of $\int p r^2$. Now we have seen that v is also the velocity of the point P; therefore we know the absolute velocity of a given point of the body or machine,
73 and consequently the whole rotatory motion.

We have the angular velocity = $\frac{nV\cdot CP}{\int p r^2 + n.CP^2}$: we shall find this a maximum when $\int p r^2 = n.CP^2$; and in this case CP = $\sqrt{\frac{\int p r^2}{n}}$, and $v = \frac{1}{2}V$. So that the
74 greatest velocity of rotation will be produced when the striking body loses $\frac{1}{2}$ of its velocity.

Authors treating of the application of that theory recommended.

What we have now delivered is sufficient for explaining all the motions of bodies turning round fixed axes; and we presume it to be agreeable to our readers, that we have given the investigation of the centres of gyration oscillation, and percussion. The curious reader will find the application of these theorems to the theory of machines in two very valuable dissertations by Mr Euler in the Memoirs of the Academy of Berlin, vols viii. and x. and occasionally by other authors who have treated mechanics in a scientific and useful manner, going
75 beyond the school-boy elements of equilibrium.

Of the rotation of free bodies.

There remains a very important case of the rotation of bodies, without which the knowledge of the motion of solid bodies, is incomplete; namely, the rotation of free bodies, that is, of bodies unconnected with any fixed points. We hardly see an instance of motion of a free body without some rotation. A stone thrown from Plate the hand, a ball from a cannon, the planets themselves, CCCXXXIX. are observed not only to advance, but also to whirl round. The famous problem of the precession of the equinoxes depends for its solution on this doctrine; and the theory of the working of ships has the same foundation. We can only touch on the leading propositions.

We need not begin by demonstrating, that when the 76 direction of the external force passes through the centre of the body, the body will advance without any rotation. This we consider as familiarly known to every person versant in mechanics; nor is it necessary to demonstrate, that when the direction of the moving force does not pass through the centre of gravity, this centre will still advance in a direction parallel to that of the moving force, and with the same velocity as if the direction of the moving force had passed through it. This is the immediate consequence of the equality of action and reaction observed in all the mechanical phenomena of the universe.

But it is incumbent on us to demonstrate, that when the direction of the moving force does not pass thro' the centre of gravity, the body will not only advance in the direction of the moving force, but will also turn round an axis, and we must determine the position of this axis, and the relation subsisting between the progressive and rotatory motions.

The celebrated John Bernoulli was the first who considered this subject; and, in his *Disquisitiones Mechanico-dynamicæ*, he has demonstrated several propositions concerning the spontaneous axis of conversion, and the motions arising from eccentric external forces: and although he assumed for the leading principle a proposition which is true only in a great number of cases, he has determined the rotation of spherical bodies with great accuracy.

This combination of motions will be palpable in some 77 simple cases, such as the following: Let two equal bodies A and B (fig. 9.) be connected by an inflexible rod (of which we may neglect the inertia for the present). Let G be the middle point, and therefore the centre of gravity. Let an external force act on the point P in the direction FP perpendicular to AB, and let AP be double of PB. Also let the force be such, that it would have caused the system to have moved from the situation AB to the situation $a b$, in an indefinitely small moment of time, had it acted immediately on the centre G. G would in this case have described Gg, A would have described Aa, and B would have described Bb, and $a b$ would have been parallel to AB: for the force impressed on A would have been equal to the force impressed on B; but because the force acts on P, the force impressed on A is but one half of that impressed on B by the property of the lever: therefore the initial motion or acceleration of A will be only half of the initial motion of B; yet the centre G must still be at g. We shall therefore ascertain the initial motion of the system, by drawing through g a line $\alpha g \beta$, so that Aα shall be $\frac{1}{2}$ of Bβ. This we shall do by making AC = AB, and drawing C$\alpha g \beta$. Then $\alpha\beta$ will be the position of the system at the end of the moment of time. Thus we see that the body must have a motion of rotation combined with its progressive motion.

Rotation.

78 How motion is performed in theſe caſes,

And we deduce immediately from the premiſes that this rotation is performed round an axis paſſing through the centre of gravity G: for ſince the centre deſcribes a ſtraight line, it is never either above or below the axis of rotation, and is therefore always in it. This is a fundamental theorem, and our ſubſequent inveſtigation is by this means greatly ſimplified, being thus reduced to two problems: 1. To determine in what direction the axis paſſes through the centre of gravity. 2. To determine the angular velocity of the rotation, or how far the centre muſt advance while the body makes one turn round the axis. This eſtabliſhes the relation between the progreſſive and rotatory motions. It will contribute to our better conception of both theſe problems to ſee the reſult in the preſent ſimple caſe.

79 It is evident, in the firſt place, that the impreſſions made on A and B are in lines A*a*, B*b* parallel to FP and G*g*; and therefore the motions of the points A, G, and B, are made in one plane, viz. the plane FPG. The axis of rotation therefore muſt be a line drawn through G, perpendicular to this plane. If we give it any other poſition, one of the points A, B, or both of them, muſt quit this plane.

In the next place, in *b a* produced take *b c* = BC. Then ſuppoſing AC to be a rigid line connected with the ſyſtem, it is evident that if there had been no rotation, the line BC would have kept parallel to its firſt poſition, and that at the end of the moment of time C would have been at *c*. The point C therefore has had, by the rotation, a backward motion *c* C, relative to the centre G or *g*, and this motion is equal to the progreſſive motion G*g* of the centre; therefore if we make Gγ equal to the circumference of a circle whoſe radius is CG, the body will make one rotation round the centre of gravity, while this centre moves along Gγ; and thus the relation is eſtabliſhed between the two motions.

80 But farther, the point C has, in fact, not moved out of its place. The incipient motion has therefore been ſuch, that C has become a ſpontaneous centre of converſion. It is eaſy to ſee that this muſt always be the caſe, whatever may be the form of the rigid body or ſyſtem of particles connected by inflexible and inextenſible lines. Since the ſyſtem both advances and turns round an axis paſſing through its centre of gravity, there muſt be ſome point in the ſyſtem, or which may be conceived as connected with it by an inflexible line, which moves backward, by the rotation, as faſt as the centre advances forward. A line drawn through this point parallel to the axis muſt in this inſtant be at reſt, and therefore muſt be a ſpontaneous axis of converſion. And, in this inſtant, the combined motions of rotation round an axis paſſing through the centre of gravity and the motion of progreſſion, are equivalent to, and actually conſtitute, an incipient ſimple motion of rotation round another axis parallel to the former, whoſe poſition may be aſcertained. But it is neceſſary to eſtabliſh this propoſition and its converſe on clearer evidence.

81 Therefore let G (fig. 10.) be the centre of gravity of a rigid ſyſtem of particles of matter, ſuch as we ſuppoſe a ſolid body to be. Let this ſyſtem be ſuppoſed to turn round the axis G*g*, while the axis itſelf is moving forward in the direction and with the velocity GI. Let the rotation be ſuch, that a particle A has the direction and velocity A *h*. Let us firſt ſuppoſe the progreſſive motion GI to be perpendicular to the axis G*g*. It will therefore be parallel to the planes of the circles deſcribed round the axis by the different particles. Let C G*g* be a plane perpendicular to GI. It will cut the plane of the circle deſcribed by A in a ſtraight line *c g*, and *g* will be the centre round which A is turning. Therefore A*g* will be the radius vector of A, and A *h* is perpendicular to A*g*. Let A *d* be perpendicular to *c g*, and in A *d* take A*e* equal to G I or *g i*. It is evident, that the abſolute motion of A is compounded of the motions A *e* and A *h*, and is the diagonal A*f* of the parallelogram A *e f h*. In the line *g c*, which is perpendicular to G*g*, take *g c* to *g* A, as A *c* to A *h*, and draw *c* C parallel to *g* G, and produce *h* A till it cut *c g* in *n*. We ſay that C *c* is in this moment a ſpontaneous axis of converſion; for, becauſe A *n* is perpendicular to A*g* and A *d* to C*g*, the angle *c g* A is equal to *d* A*n*, or *f h* A. Therefore, ſince *c g* : *g* A = *f h* : *h* A, the triangles *c g* A and *f h* A are ſimilar, and the angle *g* A *c* is equal to *h* A *f*. Take away the common angle *g* A *f*, and the remaining angle *c* A *f* is equal to the remaining angle *h* A *g*, and A*f* is perpendicular to A *c*, and the incipient motion of A is the ſame in reſpect of direction as if it were turning round the axis *c* C. Moreover, A *f* is to *f h* or *g i* as A *c* to *c g*. Therefore, both the direction and velocity of the abſolute motion of A is the ſame as if the body were turning round the fixed axis *c*C; and the combined motion A *e* of progreſſion, and the motion A *h* of rotation round G*g*, are equivalent to, and really conſtitute, a momentary ſimple motion of rotation round the axis C *c* given in poſition, that is, determinable by the ratio of A*e* to A*h*.

82 On the other hand, the converſe propoſition is, that a ſimple motion of rotation round a fixed axis C *c*, ſuch that the centre G has the velocity and direction G I perpendicular to C G, is equivalent to, and produces a motion of rotation round an axis G*g*, along with the progreſſive motion GI of this axis. This propoſition is demonſtrated in the very ſame way, from the conſideration that, by the rotation round C *c*, we have *c* A : *c g* = A *f* : *g i*. From this we deduce, that A *h* is perpendicular to A*g*, and that *f h* : A *h* = *c g* : *g* A; and thus we reſolve the motion A*f* into a motion A *h* of rotation round G*g*, and a motion A *e* of progreſſion common to the whole body.

83 But let us not confine the progreſſive motion to the direction perpendicular to the axis G*g*. Let us ſuppoſe that the whole body, while turning round G*g*, is carried forward in the direction and with the velocity GK. We can always conceive a plane L G C, which is perpendicular to the plane in which the axis G*g* and the direction G K of the progreſſive motion are ſituated.—And the motion GK may be conceived as compounded of a motion G I perpendicular to this plane and to the axis; and a motion of tranſlation G L, by which the axis ſlides along in its own direction. It is evident, that in conſequence of the firſt motion G I, there ariſes a motion of rotation round C *c*. It is alſo evident, that if, while the body is turning for a moment round C *c*, this line be ſlid along itſelf in the direction *c* C, a motion equal to GL will be induced on every particle A, and compounded with its motion of rotation A F, and that if *f* φ be drawn equal and parallel to G L, φ will be the ſituation of the particle A when G is in K.

84 And thus it appears, that when the progreſſive motion

Rotation. tion is perpendicular to the axis of rotation paſſing through the centre of gravity, the two motions progreſſive and rotatory are equivalent to a momentary ſimple motion of rotation round a ſpontaneous axis of converſion, which is at reſt: but when the progreſſive motion is inclined to the axis paſſing thro' the centre, the ſpontaneous axis of converſion is ſliding in its own direction.

85 Exemplified. We may conceive the whole of this very diſtinctly and accurately by attending to the motion of a garden roller. We may ſuppoſe it ſix feet in circumference, and that it is dragged along at the rate of three feet in a ſecond from eaſt to weſt, the axis of the roller lying north and ſouth. Suppoſe a chalk line drawn on the ſurface of the roller parallel to its axis. The roller will turn once round in two ſeconds, and this line will be in contact with the ground at the intervals of every ſix feet. In that inſtant the line on the roller now ſpoken of is at reſt, and the motion is the ſame as if it were fixed, and the roller really turning round it. In ſhort, it is then a ſpontaneous axis of converſion.

Now, ſuppoſe the roller dragged in the ſame manner and in the ſame direction along a ſheet of ice, while the ice is floating to the ſouth at the rate of four feet in a ſecond. It is now plain that the roller is turning round an axis through its centre of gravity, while the centre is carried in the direction f 36° 52′ W. at the rate of five feet *per* ſecond. It is alſo plain, that when the line drawn on the ſurface of the ſtone is applied to the ice, its only motion is that which the ice itſelf has to the ſouthward. The motion is now a motion of rotation round this ſpontaneous axis of converſion, compounded with the motion of four feet *per* ſecond in the direction of this axis. And thus we ſee that any complication of motion of rotation round an axis paſſing through the centre of gravity, and a motion of progreſſion of that centre, may always be reduced to a momentary or incipient motion of rotation round another axis parallel to the former, compounded with a motion of that axis in its own direction.

85 The demonſtration which we have given of theſe two propoſitions points out the method of finding the axis Cc, the incipient rotation round which is equivalent to the combined progreſſive motion of the body, and the rotation round the axis Gg. We have only to note the rotatory velocity Ab of ſome particle A, and its diſtance Ag from the axis, and the progreſſive velocity GI of the whole body, and then to make GC a fourth proportional to Ab, GI, and gA, and to place GC in a plane perpendicular to GI, which is perpendicular to Gg, and to place C on that ſide of Gg which is moving in the oppoſite direction to the axis.

86 In the ſimple caſe of this problem, which we exhibited in order to give us eaſy and familiar notions of the ſubject, it appeared that the retrograde velocity of rotation of the point C was equal to the progreſſive velocity of the centre. This muſt be the caſe in every point of the circumference of the circle of which CG, fig. 9. is the radius. Therefore, as the body advances, and turns round G, this circle will apply itſelf in ſucceſſion to the line CK parallel to Gγ; and any individual point of it, ſuch as C, will deſcribe a cycloid of which this circle is the generating circle, CK the baſe, and CG half the altitude. The other points of the body will deſcribe trochoids, elongated or contracted according as the deſcribing points are nearer to or more remote from G than the point C is.

It is now evident that all this muſt obtain in every caſe, as well as in this ſimple one. And when we have aſcertained the diſtance GC between the axis of rotation paſſing through the centre, and the momentary ſpontaneous axis of converſion paſſing through C, we can then aſcertain the relation between the motions of rotation and progreſſion. We then know that the body will make one rotation round its central axis, while its centre moves over a ſpace equal to the circumference of a circle of a known diameter. Rotation. 87 The application made to more complex caſes.

We muſt therefore proceed to the methods for determining the poſition of the point C. This muſt depend on the proportion between the velocity of the general progreſſive motion, that is, the velocity of the centre, and the velocity of ſome point of the body.—This muſt be aſcertained by obſervation. In moſt caſes which are intereſting, we learn the poſition of the axis, the place of its poles, the comparative progreſſive velocity of the centre, and the velocity of rotation of the different points, in a variety of ways; and it would not much increaſe our knowledge to detail the rules which may be followed for this purpoſe. The circumſtance which chiefly intereſts us at preſent is to know how theſe motions may be produced; what force is neceſſary, and how it muſt be applied, in order to produce a given motion of rotation and progreſſion; or what will be the motion which a given force, applied in a given manner, will produce.

We have already given the principles on which we may proceed in this inveſtigation. We have ſhown the circumſtances which determine the place of the centre of percuſſion of a body turning round a given fixed axis. This centre of percuſſion is the point of the body where all the inherent forces of the whirling body preciſely balance each other, or rather where they unite and compoſe one accumulated progreſſive force, which may then be oppoſed by an equal and oppoſite external force. If, therefore, the body is not whirling, but at reſt on this fixed axis, and if this external force be applied at the centre of percuſſion, now become a *point of impulſion*, a rotation will commence round the fixed axis preciſely equal to what had been ſtopped by this external force, but in the oppoſite direction; or, if the external force be applied in the direction in which the centre of percuſſion of the whirling body was moving at the inſtant of ſtoppage, the rotation produced by this impulſe will be the ſame in every reſpect. And we found that in the inſtant of application of this external force, either to ſtop or to begin the motion, no preſſure whatever was excited on the ſupports of the axis, and that the axis was, in this inſtant, a ſpontaneous axis of converſion. 88

Moreover, we have ſhown, art. 84, that a rotation round any axis, whether fixed or ſpontaneous, is equivalent to, or compounded of, a rotation round another axis *parallel to it*, and paſſing through the centre of gravity, and a progreſſive motion in the direction of the centre's motion at the inſtant of impulſe.

Now, as the poſition of the fixed axis, and the known diſpoſition of all the particles of the body with reſpect to this axis, determines the place of the centre of percuſſion, and furniſhes all the mathematical conditions which muſt be implemented in its determination, and the direction and magnitude of the force which is produced and exerted at the centre of percuſſion; ſo, on the other hand, the knowledge of the magnitude and

direction

Rotation. direction of an external force which is exerted on the point of impulsion of a body not connected with any fixed axis, and on the disposition of all the parts of this body with respect to this point of impulsion, will furnish us with the mathematical circumstances which determine the position of the spontaneous axis of conversion, and therefore determine the position of the axis through the centre (parallel to the spontaneous axis of conversion), round which the body will whirl, while its centre proceeds in the direction of the external force.

89 Mode of determining the axis of progressive rotation the converse of that for determining the centre of percussion.

The process, therefore, for determining the axis of progressive rotation is just the converse of the process for determining the centre of percussion.

John Bernoulli was the first who considered the motion of free bodies impelled by forces whose line of direction did not pass through their centre of gravity; and he takes it for granted, that since the body both advances and turns round an axis passing through the centre of gravity, this axis is perpendicular to the plane passing through the direction of the force, and through the point of impulsion and the centre of gravity. Other authors of the first name, such as Huyghens, Leibnitz, Roberval, &c. have thought themselves obliged to demonstrate this. Their demonstration is as follows:

Let a body whose centre of gravity is G (fig. 11.) be impelled at the point P by a force acting in the direction PQ not passing through the centre. The inertia of the whole body will resist in the same manner as if the whole matter were collected in G, and therefore the resistance will be propagated to the point P in the direction GP. The particle P, therefore, is impelled in the direction PQ, and resisted in the direction PA, and must therefore begin to move in some direction PB, which makes the diagonal of a parallelogram of which the sides have the directions PQ and PA. The diagonal and sides of a parallelogram are in one plane. P is therefore moving in the plane APQB or GPQ, and it is turning round an axis which passes through G.—Therefore this axis *must* be perpendicular to the plane GPQ.

90 It would require a series of difficult propositions to show the fallacy of this reasoning in general terms, and to determine the position of the axis through G. We shall content ourselves with a very simple case, where there can be no hesitation. Let A and B (fig. 12.) be two equal balls connected with the axis *ab* by inflexible lines A*a*, B*b*, perpendicular to *ab*. Let A*a* be 1, and B*b* 2. The centre of gravity G will evidently be in the line *c*G parallel to A*a* and B*b*, and in the middle of *ab*, and *c*G is $1\frac{1}{2}$. Let O be the centre of oscillation. *c*O is $= \frac{A.Aa^2 + B.Bb^2}{A + B.cG}, = \frac{4}{3}$.—Draw A*m*, B*n* perpendicular to *c*G, and suppose the balls transferred to *m* and *n*. Their centre of oscillation will be still at O; and we see that if the system in this form were stopped at O, all would be in equilibrio. For the force with which the ball A arrives (by swinging round the axis) at *m*, is as its quantity of matter and velocity jointly, that is, A.A*a*, or 1. That of B arriving at *n* is B.B*b*, or 2. The arm *m*O of the lever turning round O is $\frac{2}{3}$, and the arm *n*O is $\frac{1}{3}$. The forces, therefore, are reciprocally as the arms of the lever on which they act, and their momenta, or powers to turn the line *mn* round O, are equal and opposite, and therefore balance each other; and therefore, at the instant of stopping, no pressure is exerted at *c*. Therefore, if any impulse is made at O, the balls at *m* and *n* will be put in motion with velocities 1 and 2, and *c* will be a spontaneous centre of conversion. Let us see whether this will be the case when the balls are in their natural places A and B, or whether there will be any tendency to a rotation round the axis *c*O. The momentum of A, by which it tends to produce a rotation round *c*O is A.A*a*.A*m*, $= 1 \times Am$. That of B is B.B*b*.B*n*, $= 2 \times Bn$. A*m* and B*n* are equal, and therefore the momentum of B is double that of A, and there is a tendency of the system to turn round *c*O; and if, at the instant of stoppage, the supports of the axis *ab* were removed, this rotation round *c*O would take place, and the point *b* would advance, and *a* would recede, *c* only remaining at rest. Therefore, if an impulse were made at O, *ab* would not become a spontaneous momentary axis of conversion, and O is not the centre of percussion. This centre must be somewhere in the line OP parallel to *ab*, as at P, and so situated that the momenta A.A*a*.Aα and B.Bβ.Bβ may be equal, or that Aα may be double of Bβ, or *ap* double of *bp*. If an impulse be now made at P, the balls AB will be urged by forces as 1 and 2, and therefore will move as if round the axis *ab*, and there will be no pressures produced at *a* and *b*, and *ab* will really become a momentary spontaneous axis of conversion.

Now join G and P. Here then it is evident, that a body or system A, B, receiving an impulse at P perpendicular to the plane *ac*G, acquires to itself a spontaneous axis of conversion which is not perpendicular to the line joining the point of impulsion and the centre of gravity. And we have shown, in art. 84. that this motion round *ab* is compounded of a progressive motion of the whole body in the direction of the centre, and a rotation round an axis passing through the centre *parallel to ab*. Therefore, in this system of free bodies, the axis of rotation is not perpendicular to the plane passing through the centre of gravity in the direction of the impelling force.

91 Difficulty of ascertaining its position in general terms.

As we have already observed, it would be a laborious task to ascertain in general terms the position of the progressive axis of rotation. Although the process is the inverse of that for determining the centre of percussion when the axis of rotation is given, it is a most intricate business to convert the steps of this process. The general method is this: The momentum of a particle A (fig. 5.) by which it tends to change the position of the axis D*d*, has for its factors AαA*l*, and A$\dot{a}$, which are its distances from three planes D*d*$\vartheta\Delta$, DCO*n*, and C*g*$\gamma\varkappa$, given in position. The sum of all these must be equal to nothing, by the compensation of positive and negative quantities. We must find three other planes (of which only one is in some measure determined in position, being perpendicular to DCO*n*), so situated that the sums of similar products of the distances of the particles from them may in like manner be equal to nothing. This is a very intricate problem; so intricate, that mathematicians have long doubted and disputed about the certainty of the solutions. Euler, d'Alembert, Frisi, Landen, and others, have at last proved, that every body, however irregular its shape, has at least three axes passing through its centre of gravity, round which it will continue to revolve

Rotation. volve while proceeding forward, and that these are at right angles to each other; and they have given the conditions which must be implemented in the determination of these axes. But they still leave us exceedingly at a loss for means to discover the positions of the axes of a given body which have these conditions.

To solve this problem therefore in general terms, would lead to a disquisition altogether disproportioned to our work. We must restrict ourselves to those forms of body and situations of the point of impulsion which admit of the coincidence of the centres of oscillation and percussion; and we must leave out the cases where the axis has a motion in the direction of its length; that is, we shall always suppose the spontaneous axis of conversion to have no motion. Thus we shall comprehend the phenomena of the planetary motions, similar to the precession of our equinoctial points, and all the interesting cases of practical mechanics. The speculative mathematical reader will fill up the blanks of this investigation by consulting the writings of Euler and D'Almbert in the Berlin Memoirs, Frisi's Cosmographia, and the papers of Mr Landen, Mr Milner, and Mr Vince, in the Philosophical Transactions. But we hope, by means of a beautiful proposition on the composition of rotatory motions, to enable every reader to discover the position of the axis of progressive rotation in every case which may interest him, without the previous solution of the intricate problem mentioned above.

92 Mode of ascertaining it in most interesting cases.

Let ABPC $p\,b$ A (fig. 13.) be a section of a body through its centre of gravity G, so formed, that the part ABPC is similar, and similarly placed with the part A $b\,p$ C, so that the plane AC would divide it equally. Let this body be impelled at P in the direction HP, perpendicular to the plane AC. The axis round which it will turn will be perpendicular to G π. Suppose it at A. Then drawing AB and A b to similar points, it is plain that B β, $b\,\beta$ are equal and opposite; these represent the forces which would raise or lower one end of the axis, as has been already observed. The axis therefore will remain perpendicular to G π.

93 Let the body be so shaped, that if the parts of the right and left of the point of impulse π (the impulse is here supposed not *perpendicular* to the plane AC, but *in* this plane) are equal and similarly placed; then the momenta round AC must balance each other, and the axis EF will have no tendency to go out of the plane A B C b A perpendicular to the impulse.

Any body whose shape has these two properties will turn round an axis perpendicular to the plane which passes through the centre of gravity in the direction of the impelling force. This condition is always found in the planets when disturbed by the gravitation to a distant planet: for they are all figures of revolution. The direction of the disturbing or impelling force is always in a plane passing through the axis and the disturbing body.

With such limitations therefore we propose the following problem:

94 Let G (fig. 14.) be the centre of gravity of a body in free space, which is impelled by an external force f, acting in the line FP, which does not pass through the centre. Let m be the number of equal particles in the body, or its quantity of matter. Let the force f be such, that it would communicate to the body the velocity v; that is, would cause the centre to move with the velocity v. It may be expressed by the quantity of motion which it produces, that is, by $m\,v$, and it would produce the velocity $m\,v$ on one particle. It is required to determine the whole motion, progressive and rotatory, which it will produce, and the space which it will describe during one turn round its axis. Rotation.

Draw GI parallel and PGC perpendicular to FP, and let GI be taken for the measure of the progressive velocity v.

It has been demonstrated that the centre G will proceed in the direction GI with the velocity v, and that the body will at the same time turn round an axis passing through G, perpendicular to the plane of the figure, every particle describing circles in parallel planes round the axis, and with velocities of rotation proportional to their distances from it. There is therefore a certain distance G B, such that the velocity with which a particle describes its circumference is equal to the progressive velocity v. Let BCD be this circumference. When the particle describing this circumference is in the line CGP, and in that part of it which lies beyond P from G, its absolute velocity must be double that of the centre G; but when it is in the opposite point C, its retrogade velocity being equal to the progressive velocity of the centre, it must be at rest. In every position of the body, therefore, that point of the accompanying circumference which is at this extremity of the perpendicular drawn through the centre on the line of direction of the impelling force is at rest. It is at that instant a spontaneous centre of conversion, and the straight line drawn through it perpendicular to the plane of the figure is then a spontaneous axis of conversion, and every particle is in a momentary state of rotation round this axis, in directions perpendicular to the lines drawn to the axis at right angles, and with velocities proportional to these distances; and lastly, the body advances in the direction GI through a space equal to the circumference BCD, while it makes one turn round G.

95 Let A be one of the particles in the plane of the figure. Join AC, AG, AP. Draw Ab, Ac, Ad perpendicular to CP, CA, GA. The absolute motion Ac of A is compounded of the progressive motion Ab common to the whole body and equal to GI, and the motion Ad of rotation round the centre of gravity G. Therefore since Ab is equal to v, and Ac is the diagonal of a parallelogram given both in species and mangitude, it is also given, and (as appears also from the reasoning in art. 85.) it is to GI as CA to CG.

96 By the application of the force $m\,v$ in the direction FP, every particle of the body is dragged out of its place, and exerts a resistance equal to the motion which it acquires. A part of this force, which we may call $m\,v$, is employed in communicating the motion Ac to A; and, from what has been lately shown, CG : CA = GI : Ac, = v : Ac, and therefore A$c = \frac{v \cdot CA}{CG}$. But farther (agreeably to what was demonstrated in art 16.) we have CP : CA = Ac : $m\,v$, = $\frac{v \cdot CA}{CG}$: $m\,v$, and therefore $m\,v = \frac{v \cdot CA^2}{}$

Rotation. $\frac{v.CA^2}{CG.CP}$. Therefore the whole force employed in communicating to each particle the motion it really acquires or $m\,v$, is equal to the fluent of the quantity $\frac{v.CA^2}{CP.CG}$ or $m\,v = \frac{v.\int CA^2}{CP.CG}$, and $m.CP.CG = \int CA^2$, which by art. 23. is equal to $\int GA^2 + m.CG^2$. Therefore we have $m.CP.CG - m.CG.CG = \int GA^2$, or $m.GP.CG = \int GA^2$, and finally, $CG = \frac{\int GA^2}{m.GP}$.

Now the form of the body gives us $\int GA^2$, and the position of the impelling force gives us $m.GP$. Therefore we can compute the value of CG; and if π be the periphery of a circle whose radius is unity, we have $\pi.CG$ equal to the space which the body must describe in the direction GI, while it makes one rotation round its axis.

97 *Cor.* 1. The angular velocity, that is, the number of turns or the number of degrees which one of the radii will make in a given time, is proportional to the impelling force: for the length of CG depends only on the form of the body and the situation of the point of impulsion; while the time of describing π times this length is inversely as the force.

98 2. The angular velocity with any given force is as GP: for CG, and consequently the circumference $\pi.CG$, described during one turn, is inversely as GP.

99 3. PC is equal to $\frac{\int PA^2}{m.GP}$: for we have $\int PA^2 = \int GA^2 + m.GP^2$. Therefore $\frac{\int PA^2}{m.GP} = \frac{\int GA^2}{m.GP} + \frac{m.GP^2}{m.GP}$, $= CG + GP$, $= CP$.

100 4. If the point C is the centre of impulsion of the same body. P will be a spontaneous centre of conversion (see art. 41).

101 5. A force equal and opposite to $m\,v$, or to f, applied at G, will stop the progressive motion, but will make no change in the rotation; but if it be applied at P, it will stop all motion both progressive and rotatory. If applied between P and G, it will stop the progressive motion, but will leave some motion of rotation. If applied beyond P it will leave a rotation in the opposite direction. If applied beyond G, or between G and C, it will increase the rotation. All this will be easily conceived by reflecting on its effect on the body at rest.

102 6. A whirling body which has no progressive motion cannot have been brought into this state by the action of a single force. It may have been put into this condition by the simultaneous operations of two equal and opposite forces. The equality and opposition of the forces is necessary for stopping all progressive motion. If one of them has acted at the centre, the rotatory motion has been the effect of the other only. If they have acted on opposite sides, they conspired with each other in producing the rotation; but have opposed each other if they acted on opposite sides.

In like manner, it is plain that a motion of rotation, together with a progressive motion of the centre in the direction of the axis, could not have been produced by the action of a single force.

7. When the space S which a body describes during one rotation has been observed, we can discover the point of impulse by which a single force may have acted in producing both the motions of progression and rotation: for $CG = \frac{S}{\pi}$, and $GP = \frac{\int GA^2}{m.CG}$, $= \frac{\pi \int GA^2}{m.S}$. Rotation. 103

104 Application of this doctrine to the heavenly motions.

In this manner we can tell the distances from the centre at which the sun and planets may have received the single impulses which gave them both their motions of revolution in their orbits and rotation round their axes.

It was found (art. 40. *f*) that the distance OG of the centre of oscillation or percussion of a sphere swinging round the fixed point C from its centre G, is $\frac{2}{5}$ of the third proportional to CG, and the radius of the sphere, or that $OG = \frac{2}{5}\frac{RG^2}{CG}$. Supposing the planets to be homogeneous and spherical, and calling the radius of the planet r, and the radius of its orbit R, the time of a rotation round its axis t, and the time of a revolution in its orbit T, and making $1 : \pi$ the ratio of radius to the periphery of a circle, we shall have πR for the circumference of the orbit, and $\pi R \frac{t}{T}$ for the arch of this circumference described during one rotation round the axis. This is S in the abovementioned formula. Then, diminishing this in the ratio of the circumference to radius, we obtain $CG = R\frac{t}{T}$, and $OG = \frac{2}{5}\frac{r^2}{CG}$, $= \frac{2}{5}\frac{Tr^2}{tR}$. This is equivalent to $\frac{\pi \int GA^2}{m.S}$, and easier obtained.

This gives us $G\,v$

105 For the Earth $= \frac{r}{157}$
Moon $\frac{r}{555}$
Mars $\frac{r}{195}$
Jupiter $\frac{r}{2,8125}$
Saturn $\frac{r}{2,588}$
} nearly.

We have not data for determining this for the sun. But the very circumstance of his having a rotation in $27^d\ 7^h\ 47'$ makes it very probable that he, with all his attending planets, is also moving forward in the celestial spaces, perhaps round some centre of still more general and extensive gravitation: for the perfect opposition and equality of two forces, necessary for giving a rotation without a progressive motion, has the odds against it of infinity to unity. This corroborates the conjectures of philosophers, and the observations of Herschel and other astronomers, who think that the solar system is approaching to that quarter of the heavens in which the constellation Aquila is situated.

8. As in the communication of progressive motion among bodies, the same quantity of motion is preserved before and after collision, so in the communication of rotation

Rotation. tation among whirling bodies the quantity of rotatory momentum is preſerved. This appears from the general tenor of our formulæ: for if we ſuppoſe a body turning round an axis paſſing through its centre, without any progreſſive motion, we muſt ſuppoſe that the force mv, which put it in motion, has been oppoſed by an equal and oppoſite force. Let this be ſuppoſed to have acted on the centre. Then the whole rotation has been the effect of the other acting at ſome diſtance GP from the centre. Its momentum is mv.GP. Had it acted alone, it would have produced a rotation compounded with a progreſſive motion of the centre with the velocity v; and the body acquires a momentary ſpontaneous axis of converſion at the diſtance GC from the centre of gravity. The abſolute velocity AC of any particle is $\frac{v.AC}{CG}$; its momentum is $\frac{v.AC^2}{GC}$, and the ſum of all the momenta is $\frac{\int v.AC^2}{CG}$, or $\frac{v\int AC^2}{CG}$, and this is equal to mv.GP. But when the progreſſive motion is ſtopped, Ab, which was a conſtituent of the abſolute motion of A, is annihilated, and nothing remains but the motion Ad of rotation round G. But the triangles dAc and GAC were demonſtrated (n° 81.) to be ſimilar; and therefore AC : Ad = CA : GA. Therefore the abſolute velocity of the particle, while turning round the quieſcent centre of gravity G, is $\frac{v.GA}{GC}$; its momentum is $\frac{v.GA^2}{GC}$; the ſum of all the momenta is $\frac{v\int GA}{GC}$; and this is ſtill equal to mv. Obſerve, that now GC is not the diſtance of the centre of converſion from the centre of gravity, becauſe there is now no ſuch thing as the ſpontaneous axis of converſion, or rather it coincides with the axis of rotation. GC is the diſtance from the centre of a particle whoſe velocity of rotation is equal to v.

Now let the body be changed, either by a new diſtribution of its parts, or by an addition or abſtraction of matter, or by both; and let the ſame force mv act at the ſame diſtance GP from the centre. We ſhall ſtill have mv.GP = $\frac{v\int GA^2}{GC}$; and therefore the ſum of the momenta of the particles of the whirling body is ſtill the ſame, viz. equal to the momentum of the force mv acting by the lever GP. If therefore a free body has been turning round its centre of gravity, and has the diſtribution of its parts ſuddenly changed (the centre however remaining in the ſame place), or has a quantity of matter ſuddenly added or taken away, it will turn with ſuch an angular velocity that the ſum of the momenta is the ſame as before.

107 Application to the problem of the preceſſion of the equinoxes.

We have been ſo particular on this ſubject, becauſe it affects the celebrated problem of the preceſſion of the equinoxes; and Sir Iſaac Newton's ſolution of it is erroneous on account of his miſtake in this particular. He computes the velocity with which a quantity of matter equal to the exceſs of the terreſtrial ſpheroid over the inſcribed ſphere would perform its librations, if detached from the ſpherical nucleus. He then ſuppoſes it ſuddenly to adhere to the ſphere, and to drag it into the ſame libratory motion; and he computes the libration of the whole maſs, upon the ſuppoſition that the quantity of motion in the libratory ſpheroid is the ſame with the previous quantity of motion of the librating redundant ring or ſhell; whereas he ſhould have computed it on the ſuppoſition that it was the quantity of momenta that remained unchanged. Rotation.

The ſame thing obtains in rotations round fixed axes, as appears by the perfect ſameneſs of the formulæ for both claſſes of motions.

This law, which, in imitation of the Leibnitzians, we might call the *conſervatio momentorum*, makes it of importance to have expreſſions of the value of the accumulated momenta in ſuch caſes as moſt frequently occur. The moſt frequent is that of a ſphere or ſpheroid in rotation round an axis or an equatorial diameter; and a knowledge of it is neceſſary for the ſolution of the problem of the preceſſion of the equinoxes. See Precession, n° 83.

Let APap (fig. 15.) be a ſphere turning round the diameter Pp, and let DD', dd' be two circles parallel to the equator Aa, very near each other, comprehending between them an elementary ſlice of the ſphere. Let CA be = a, CB = x, and BD = y, and let π be the circumference of a circle whoſe radius is 1. Laſtly, let the velocity of the point A be v. Then 108

$v\frac{y}{a}$ is the velocity at the diſtance y from the axis, πy is the quantity of matter in the circumference whoſe radius is y; for it is the length of that circumference when expanded.

$\frac{v\pi y^2}{a}$, or $\frac{vy}{a}\times\pi y$, is the quantity of motion in this circumference turning round the axis Pp.

$\frac{v\pi y^3}{a}$ is the momentum of the ſame circumference.

$\frac{v\pi y^3\dot{y}}{a}$ is the fluxion of the momentum of the circle whoſe radius is y, turning in its own plane round the axis.

$\frac{v\pi y^4}{4a}$ is the fluent, or the momentum of the whole circle; and therefore it is the momentum of the circle DD'.

$\frac{v\pi y^4\dot{x}}{4a}$ is the fluxion of the momentum of the hemiſphere; for Bb = $\dot{x}$, and this fraction is the momentum of the ſlice dDD'd'.

$y^2 = a^2 - x^2$, and $y^4 = a^4 - 2a^2x^2 + x^4$. Therefore $\frac{v\pi}{2a}\times(a^4\dot{x} - 2a^2x^3\dot{x} + x^4\dot{x})$ is the fluxion of the momentum of the whole ſphere. Of this the fluent for the ſegments whoſe heights are CB, or x, is $\frac{v\pi}{2a}(a^4x - \frac{2a^2x^3}{3} + \frac{x^5}{5})$.

Let x become a, and we have for the momentum of the whole ſphere $\frac{v\pi}{2a}(a^5 - \frac{2}{3}a^5 + \frac{1}{5}a^5)$, $= v\pi(\frac{a^4}{2} - \frac{a^4}{3} + \frac{a^4}{10}) = v\pi\frac{4}{15}a^4$.

Let us ſuppoſe that this rotation has been produced by the action of a force mu; that is, a force which would communicate the velocity n to the whole matter 109

Rotation. of the ſphere, had it acted in a direction paſſing through its centre; and let us ſuppoſe that this force acted on the equatorial point A at right angles to AC: Its momentum is $mu\,a$, and this is equal to $v \cdot \frac{8}{15}\pi a^4$. Alſo, we know that $m = \frac{2}{3}\pi a^3$. Therefore we have $u \cdot \frac{2}{3}\pi a^3 = v \cdot \frac{8}{15}\pi a^4 \cdot \frac{2}{3}$ $u = \frac{4}{5}v$, and $v = \frac{5}{4}u$.

110 Let EPQ p be an oblate ſpheroid whoſe ſemi-axis PC is a, an equatorial radius EC is b, and let v be the velocity on the equator of the inſcribed ſphere. Then ſince the momentum of the whirling circle DD′ is $\frac{\frac{2}{5}\pi b^4}{\frac{1}{4}a}$, the momenta of the ſphere and ſpheroid are in the quadruplicate ratio of their equatorial radii; and therefore that of the whole ſpheroid is $\frac{4}{5}\pi b^4 v$. And if ω be the velocity at E correſponding to the velocity v at A, ſo that $\omega = \frac{b}{a}v$, we have the momentum of the ſpheroid, expreſſed in terms of the equatorial velocity at the ſurface, $\frac{4}{5}b^3 a\omega$.

111 If the ſame force mu be made to act in the ſame manner at E, its momentum mub is $= \frac{4}{5}b^3 a\omega$, and $\omega = \frac{15mu}{4\pi b^3 a}$. Therefore the angular velocities $\frac{v}{a}, \frac{\omega}{b}$, which the ſame force mu acting at A or E will produce in the ſpere and the ſpheroid, are as $\frac{15mu}{4\pi a^4}$ and $\frac{15mu}{4\pi b^3 a}$, that is, in the triplicate ratio of the equatorial diameter b to the polar axis a.

112 Laſtly, if the oblate ſpheroid is made to turn round an equatorial diameter paſſing through C perpendicular to the plane of the figure, it is plain that every ſection parallel to the meridian EPQ p is an ellipſe ſimilar to this meridian. If this ellipſe differs very little from the inſcribed circle, as is the caſe of the earth in the problem of the preceſſion of the equinoxes, the momentum of each ellipſe may be conſidered as equal to that of a circle of the ſame area, or whoſe diameter is a mean proportional between the equatorial and polar diameters of the ſpheroid. This radius is to the radius of the circumſcribed circle as $\sqrt{ba}$ to b. Therefore the momenta of the ſection of the ſpheroid and of the circumſcribed ſphere are in the conſtant ratio of $b^2 a^2$ to b^4, or of a^2 to b^2. And if the velocity in the equator of this circumſcribed ſphere be called w, the momentum of the ſphere is $\frac{4}{5}\pi b^4 w$; and therefore that of the ſpheroid is $\frac{4}{5}\pi b^2 a^2 w$, agreeably to what was aſſumed in the article Preceſſion, n° 33.

This value of the momentum of a ſpheroid round an equatorial diameter is only a very eaſy approximation; an exact value may be obtained by an infinite ſeries. The whole matter of the ſpheroid may be conſidered as uniformly diſtributed on the ſurface of a ſimilar ſpheroid whoſe diameter is $= \sqrt{\frac{1}{2}}$ of the diameter of the ſpheroid. It will have the ſame momentum, becauſe a triangle in one of the ellipſes, having an elementary arch of the circumference for its baſe, and the centre of the ellipſe for its vertex, has its centre of gyration diſtant from the vertex $\sqrt{\frac{1}{2}}$ the length of the radius of the ellipſe, and the problem is reduced to the finding the ſum of theſe lines. But even when the ſeries for this ſum involves the 3d power of the eccentricity, it is not more exact than the above approximation.

A ſimilar propoſition may be obtained for a prolate ſpheroid vibrating round an equatorial diameter, and applied to the conjectural ſhape of the moon, for explaining her oſcillations. Rotation.

113 All rotatory motions accompanied by centrifugal forces.

The reader muſt have obſerved that the preceding diſquiſitions refer to thoſe motions only which reſult from the action of external forces and to the ſtate of incipient motion. All circular motions, ſuch as thoſe of rotation, are accompanied by centrifugal forces. A central force is neceſſary for retaining every particle in its circular path; ſuch forces muſt therefore be excited in the body, and can ariſe only from the forces of coheſion by which its particles are held together. Theſe forces are mutual, equal, and oppoſite; and as much as a particle A (fig. 5.) is retained by a force in the direction A a of the line which connects it with the fixed axis D d or in the direction AG (fig. 10.), which connects it with the progreſſive axis; ſo much muſt the point a of the axis D d be urged in the oppoſite direction aA, or ſo much muſt the whole body be urged in the direction GA. Every point therefore of the axis D d, or of the axis through G in fig. 10. is carried in a variety of directions perpendicular to itſelf. Theſe forces may or may not balance each other. If this balance obtains with reſpect to the fixed axis, its ſupports will ſuſtain no preſſure but what ariſes from the external force; if not, one ſupport will be more preſſed than the other; and if both were removed, the axis would change its poſition. The ſame muſt be affirmed of the axis through G in fig. 10. This, having no ſupport, muſt change its poſition.

And thus it may happen, that the axis of rotation 114
paſſing through G which has been determined by the preceding diſquiſitions is not permanent either in reſpect of the body, or in reſpect of abſolute ſpace. Theſe two rotations are eſſentially different. The way to conceive both is this. Suppoſe a ſpherical ſurface deſcribed round the body, having its centre in the centre of gravity; and ſuppoſe this ſurface to revolve and to proceed forward along with the body: in ſhort, let it be conceived as an immaterial ſurface attached to the body. The axis of rotation will paſs through this ſurface in two points which we ſhall call its poles. Now, we ſay that the axis is permanent with reſpect to the body when it has always the ſame poles in this ſpherical ſurface. Suppoſe another ſpherical ſurface deſcribed round the ſame centre, and that this ſurface alſo accompanies the body in all its progreſſive motion, but does not turn with it. The axis is permanent with reſpect to abſolute ſpace when it has always the ſame poles in this ſurface: it is evident that theſe two facts are not inſeparable. A boy's top ſpins on the ſame point and the ſame corporeal axis, while, towards the end of its motion, we obſerve it directing this round and round to different quarters of the room. And when we make an egg or a lemon ſpin with great rapidity on its ſide on a level table, we ſee it gradually riſe up, till it ſtand quite on end, ſpinning all the while round an axis pointing to the zenith.

This change in the poſition of the axis is produced 115
by the unbalanced actions of the centrifugal forces exerted by the particles. Suppoſe two equal balls A and B (fig. 16.) connected by an inflexible rod whoſe middle point is G, the centre of gravity of the balls. This ſyſtem may be made to turn round the material axis Dd, A deſcribing the circle AEFA, and B deſcribing the circle BHKB. The rod AB may alſo be conceived as

Rotation. as moveable round the point G by means of a pin at right angles to the axis. Suppoſe the balls paſſing through the ſituations A and B; their centrifugal forces urge them at the ſame time in the directions CA and OB, which impulſions conſpire to make the connecting rod recede from both ends of the axis D*d*. And thus the balls, inſtead of deſcribing parallel circles round this axis, will deſcribe parallel ſpirals, gradually opening the angles DGA, *d*GB more and more, till the balls acquire the poſition $\alpha\beta$ at right angles to the axis. They will not ſtop there, for each came into that poſition with an oblique motion. They will paſs it; and were it not for the reſiſtance of the air and the friction of the joint at G, they would go on till the ball A came to deſcribe the circle BHK, and the ball B to deſcribe the circle AEF. The centrifugal forces will now have exhauſted by oppoſition all the motions which they had acquired during their paſſage from the poſition AB to the poſition $\alpha\beta$; and now they will again deſcribe ſpirals gradually opening, and then contracting, till the balls arrive at their original poſition AB, when the proceſs will begin again. Thus they will continue a kind of oſcillating rotation.

116 Thus the axis is continually changing with reſpect to the ſyſtem of balls; but it is fixed in reſpect to abſolute ſpace, becauſe the axis D*d* is ſupported. It does not yet appear that it has any tendency to change its poſition, becauſe the centrifugal tendency of the balls is completely yielded to by the joint at G. The material axis has indeed ſuſtained no change; but the real axis, or mathematical line round which the rotation was going on every moment, has been continually ſhifting its place. This is not ſo obvious, and requires a more attentive conſideration. To ſhow accurately the gradual change of poſition of the real axis of rotation would require a long diſcuſſion. We ſhall content ourſelves with exhibiting a caſe where the poſition of the momentary axis is unqueſtionably different from D*d*, which we may ſuppoſe horizontal.

Take the balls in the poſition $\alpha\beta$. They came into this poſition with a ſpiral motion, and therefore each of them was moving obliquely to the tangents $\alpha\varphi$, $\beta\gamma$ to the circle $\alpha\delta\beta\epsilon$, ſuppoſe in the directions $\alpha\theta$, $\beta\lambda$. They are therefore moving round the centre G in a plane $\theta\alpha\beta\lambda$, inclined to the plane $\varphi\alpha\beta\gamma$ of the circle $\alpha\delta\beta\epsilon$. The momentary axis of rotation is therefore perpendicular to this oblique plane, and therefore does not coincide with D*d*.

117 Of the evagation of the axis. We cannot enter upon the inveſtigation of this evagation of the axis, although the ſubject is both curious and important to the ſpeculative mathematicians. A knowledge of it is abſolutely neceſſary to a *complete* ſolution of the great problem of the preceſſion. But when treating that article, we contented ourſelves with ſhowing that the evagation which obtains in this natural phenomenon is ſo exceedingly minute, that although multiplied many thouſands of times, it would eſcape the niceſt obſervations of modern aſtronomers; and that it is a thing which does not accumulate, beyond a certain limit, much too ſmall for obſervation, and then diminiſhes again, and is periodical. Euler, D'Alembert, Friſi, and De la Grange, have ſhown the momentary poſition of the real variable axis correſponding to any given time; and Landen has with great ingenuity and elegance connected theſe momentary poſitions, and given the whole paths of evagation. Mr Segnor was, we believe, the firſt who ſhowed (in a Diſſertation *De Motu Turbinum*, Halle, 1755), that in every body there were at leaſt three lines paſſing through the centre of gravity at right angles to each other, forming the ſolid angle of a cube, round which the centrifugal forces were accurately balanced, and therefore a rotation begun round either of theſe three lines would be continued, and they are permanent axes of rotation. Albert Euler gave the firſt demonſtration in 1760, and ſince that time the inveſtigation of theſe axes has been extended and improved by the different authors already named. It is an exceedingly difficult ſubject; and we recommend the ſynthetical inveſtigation by Friſi in his *Coſmographia* as the fitteſt for inſtructing a curious reader to whom the ſubject is new. We ſhall conclude this diſſertation with a beautiful theorem, the enunciation of which we owe to P. Friſi, which has amazingly improved the whole theory, and gives eaſy and elegant ſolutions of the moſt difficult problems. It is analogous to the great theorem of the compoſition of motions and forces. Rotation.

118 P. Friſi's theorem. If a body turns round an axis AG*a* (fig. 17.) paſſing through its centre of gravity G with the angular velocity *a*, while this axis is carried round another axis BG*b* with the angular velocity *b*, and if GD be taken to GK as *a* to *b* (the points B and E being taken on that ſide of the centre where they are moving towards the ſame ſide of the plane of the figure), and the line DE be drawn, then the whole and every particle of the body will be in a ſtate of rotation round a third axis CG*c*, lying in the plane of the other two, and parallel to DE, and the angular velocity *c* round this axis will be to *a* and to *b* as DE is to GD and to GE.

For, let P be any particle of the body, and ſuppoſe a ſpherical ſurface to be deſcribed round G paſſing through P. Draw PR perpendicular to the plane of the figure. It is evident that PR is the common ſection of the circle of rotation IP*i* round the axis A*a*, and the circle KP*k* of rotation round the axis B*b*. Let I*i*, K*k* be the diameters of theſe circles of rotation, F and G their centres. Draw the radii PF and PO, and the tangents PM and PN. Theſe tangents are in a plane MPN which touches the ſphere in P, and cuts the plane of the axis in a line MN, to which a line drawn from the centre G of the ſphere through the point R is perpendicular. Let PN repreſent the velocity of rotation of the point P round the axis B*b*, and P*f* its velocity of rotation round A*a*. Complete the parallelogram PN*t f*. Then P*t* is the direction and velocity of motion reſulting from the compoſition of PN and P*f*. P*t* is in the plane MPN, becauſe the diagonal of a parallelogram is in the plane of its ſides PN and P*f*.

Let perpendiculars *f* F, *t* T, be drawn to the plane of the axes, and the parallelogram PN*t f* will be orthographically projected on that plane, its projection being a parallelogram RNTF. (F here falls on the centre by accident). Draw the diagonal RT. It is evident that the plane PR*t*T is perpendicular to the plane of the two axes, becauſe PR is ſo. Therefore the compound motion P*t* is in the plane of a circle of revolution round ſome axis ſituated in the plane of the other two. Therefore produce TR, and draw GC cutting it at right

Rotation. angles in H, and let LP/ be the circle, and PH a radius. P is therefore a tangent, and perpendicular to PH, and will meet RT in ſome point Q of the line MN. The particle P is in a ſtate of rotation round the axis CG, and its velocity is to the velocities round *Aa* or *Bb* as P*f* to P*f* or PN. The triangles PRN and OPN are ſimilar. For PN the tangent is perpendicular to the radius OP, and PR is perpendicular to ON. Therefore OP : PN=PR : RN, and $RN=\frac{PR.PN}{OP}$. But the velocity of P round the axis *Bb* is OP.*b*. Therefore $RN=\frac{PR.OP.b}{OP}$, $=PR.b$. In like manner RF $=PR.a$. Therefore RF : RN $=a:b=GD:GE$. But NT : RN = ſine NRT : ſine NTR, and GD : GE = ſine GED : ſine GDE. Therefore ſine NRT : ſine NTR = ſine GED : ſine GDE. But RNT = EGD, for NR is perpendicular to EG and NT (being parallel to EF) is perpendicular to DG. Therefore TR is perpendicular to ED, and *Cc* is parallel to ED, and the rotation of the particle P is round an axis parallel to ED.

And ſince RN, RF, RT, are as the velocities *l*, *a*, *c*, round theſe different axes, and are proportional to EG, DG, DE, we have *c* to *a* or to *b* as ED to GD or GF, and the propoſition is demonſtrated.

This theorem may be thus expreſſed in general terms.

111 Expreſſed in general terms. If a body revolves round an axis paſſing through its centre of gravity with the angular velocity *a*, while this axis is carried round another axis, alſo paſſing through its centre of gravity, with the angular velocity *b*, theſe two motions compoſe a motion of every particle of the body round a third axis, lying in the plane of the other two, and inclined to each of the former axes in angles whoſe ſines are inverſely as the angular velocities round them; and the angular velocity round this new axis is to that round one of the primitive axes as the ſine of inclination of the two primative axes is to the ſine of the inclination of the new axis to the other primitive axis.

When we ſay that we owe the enunciation of this theorem to P. Friſi, we grant at the ſame time that ſomething like it has been ſuppoſed or aſſumed by other authors. Newton ſeems to have conſidered it as true, and even evident, in homogeneous ſpheres; and this has been tacitly acquieſced in by the authors who followed him in the problem of the preceſſion. Inferior writers have careleſsly aſſumed it as a truth. Thus Nollet, Graveſande, and others, in their contrivances for exhibiting experiments for illuſtrating the compoſition of vortices, proceeded on this aſſumption. Even authors of more ſcrupulous reſearch have ſatisfied themſelves with a very imperfect proof. Thus Mr Landen, in his excellent diſſertation on rotatory motion, Philoſophical Tranſactions, Vol. LXVII. contents himſelf with ſhowing, that, by the equality and oppoſite directions of the motions round the axes *Aa* and *Bb*, the point C will be at reſt, and from thence concludes that CG*c* will be the new axis of rotation. But this is exceedingly haſty (note alſo, that this diſſertation was many years poſterior to that of P. Friſi): For although the ſeparate motions of the point C may be equal and oppoſite, it is by no means either a mathematical or a mechanical conſequence that the body will turn round the axis C*c*. In order that the point C may remain at reſt, it is neceſſary that all tendencies to motion be annihilated: this is not even thought of in making the aſſumption. Friſi has ſhown, that in the motion of every particle round the axis C*c*, there is involved a motion round the two axes A*a* and B*b*, with the velocities *a* and *b*; and it is a conſequence of this, and of this only, that the impulſes which would ſeparately produce the rotations of every particle round A*a* and B*b* will, either in ſucceſſion or in conjunction, produce a rotation round C*c*. Moreover, Mr Landen's not having attended to this, has led him, as we imagine, into a miſtake reſpecting the velocity with which the axis changes its poſition; and though his proceſs exhibits the path of evagation with accuracy, we apprehend that it does not aſſign the true times of the axes arriving at particular points of this path. Rotation.

120 Concluſions deduce from this propoſition. It follows from this propoſition, that if every particle of a body, whether ſolid or fluid, receives in one inſtant a ſeparate impulſe, competent to the production of a motion of the particle round an axis with a certain angular velocity, and another impulſe competent to the production of a motion round another axis with a certain velocity, the combined effect of all theſe impulſions will be a motion of the whole ſyſtem round a third axis given in poſition, with an angular velocity which is alſo given: and this motion will obtain without any ſeparation or diſunion of parts; for we ſee that a motion round two axes conſtitute a motion round a third axis in every particle, and no ſeparation would take place although the ſyſtem were incoherent like a maſs of ſand, except by the action of the centrifugal forces ariſing from rotation. Mr Simpſon therefore erred in his ſolution of the problem of the preceſſion, by ſuppoſing another force neceſſary for enabling the particles of the fluid ſpheroid to accompay the equator when diſplaced from its former ſituation. The very force which makes the diſplacement produes the accompaniment, as far as it obtains, which we ſhall ſee preſently is not to the extent that Mr Simpſon and other authors who treat this problem have ſuppoſed.

121 For the ſame reaſon, if a body be turning round any axis, and every particle in one inſtant get an impulſe preciſely ſuch as is competent to produce a given angular velocity round another axis, the body will turn round a third axis given in poſition, with a given angular velocity: for it is indifferent (as it is in the ordinary compoſition of motion) whether the forces act on a particle at once or in ſucceſſion. The final motion is the ſame both in reſpect of direction and velocity.

122 Laſtly, when a rigid body acquires a rotation round an axis by the action of an impulſe on one part of it, and at the ſame time, or afterwards, gets an impulſe on any part which, alone, would have produced a certain rotation round another axis, the effect of the combined actions will be a rotation round a third axis, in terms of this propoſition; for when a rigid body acquires a motion round an axis, not by the ſimultaneous impulſe of the preciſely competent force on each particle, but by an impulſe on one part, *there has been propagated to every particle* (by means of the connecting forces) an impulſe preciſely competent to produce the motion which the particle really acquires; and when a rigid body, already

Rotation. ready turning round an axis A *a* (fig. 17.) receives an impulse which makes it actually turn round another axis C *c*, there *has been propagated to each particle* a force precisely competent to produce, not the motion, but the *change* of motion which takes place in that particle, this is, a force which, when compounded with the inherent force of its primitive motion, produces the new motion; that is (by this theorem), a force which alone would have caused it to turn round a third axis B*b*, with a rotation making the other constituent of the actual rotation round C*c*.

123 This must be considered as one of the most important propositions in dynamics, and gives a great extension to the doctrine of the composition of motion. We see that rotations are compounded in the same manner as other motions, and it is extremely easy to discover the composition. We have only to suppose a sphere described round the centre of the body; and the equator of this sphere corresponding to any primitive position of the axis of rotation gives us the direction and velocity of the particles situated in it. Let another great circle cut this equator in any point; it will be the equator of another rotation. Set off an arch of each from the point of intersection, proportional to the angular velocity of each rotation, and complete the spherical parallelogram. The great circle, which is the diagonal of this parallelogram, will be the equator of the rotation, which is actually compounded of the other two.

124 And thus may any two rotations be compounded. We have given an instance of this in the solution of the problem of the *Precession of the Equinoxes*, Vol. XV. p. 463.

125 It appears plainly in the demonstration of this theorem that the axis C *c* is a new line in the body. The change of rotation is not accomplished by a transference of the poles and equator of the former rotation to a new situation, in which they are again the poles and equator of the rotation; for we see that in the rotation round the axis C*c*, the particle of the body which was formerly the pole A is describing a circle round the axis C*c*. Not knowing this composition of rotations, Newton, Walmsley, Simpson, and other celebrated mathematicians, imagined, that the axis of the earth's rotation remained the same, but changed its position. In this they were confirmed by the constancy of the observed latitudes of places on the surface of the earth. But the axis of the earth's rotation really changes its place, and the poles shift through different points of its surface; but these different points are too near each other to make the change sensible to the nicest observation.

126 Respecting the position of the axis of rotation. It would seem to result from these observations, that it is impossible that the axis of rotation can change its position in absolute space without changing its position in the body, contrary to what we experience in a thousand familiar instances; and indeed this is impossible by any one change. We cannot by the impulse of any one force make a body which is turning round the axis A *a* change its position and turn round the same material axis brought into the position C *c*. In the same way that a body must pass through a series of intermediate points, in going from one end of a line to the other, so it must acquire an infinite series of intermediate rotations (each of them momentary) before the same material axis passes into another position, so as to become an axis of rotation. A momentary impulse may make a great change of the position of the axis of rotation, as it may make in the velocity of a rectilineal motion. Thus although the rotation round A *a* be indefinitely small, if another equally small rotation be impressed round an axis B*b* perpendicular to A *a*, the axis will at once shift to C*c* half way between them; but a succession of rotations is necessary for carrying the primitive material axis into a new position, where it is again an axis. This transference, however, is possible, but gradual, and must be accomplished by a *continuation* of impulses totally different from what we would at first suppose. In order that A may pass from A to C, it is not enough that it gets an impulse in the direction AC. Such an impulse would carry it thither, if the body had not been whirling round A *a* by the mere perseverance of matter in its state of motion; but when the body is already whirling round A*a*, the particles in the circle IP *i* are moving in the circumference of that circle; and since that circle also partakes of the motion given to A, every particle in it must be *incessantly* deflected from the path in which it is moving. The *continual* agency of a force is therefore necessary for this purpose; and if this force be discontinued, the point A will immediately quit the plane of the arch AC, along which we are endeavouring to move it, and will start up. Rotation.

127 This is the theorem which we formerly said would enable us to overcome the difficulties in the investigation of the axis of rotation.

128 The evagations of the poles of rotation by the action of centrifugal forces. Thus we can discover what Mr Landen calls the evagations of the poles of rotation by the action of centrifugal forces: For in fig 16. the known velocity of the ball A and the radius AC of its circle of rotation will give us the centrifugal force by which the balls *intend* to turn in the plane DA*d*BD. This gives the axis E *d* a tendency to move in a plane perpendicular to the plane of the figure; and its separation from the poles D and *d* does not depend on the separation of the connecting rod AB from its present inclination to D *d*, but on the angle which the spiral path of the ball makes with the plane of a circle of rotation round D*d*. The distance of the new poles from D and *d* is an arch of a circle which measures the angle made by the spiral with the circle of rotation round the primitive axis. This will gradually increase, and the mathematical axis of rotation will be describing a spiral round D and *d*, gradually separating from these points, and again approaching them, and coinciding with them again, at the time that the balls themselves are most of all removed from their primitive situation, namely, when A is in the place of B.

129 And the incipient axis in complicated cases. The same theorem also enables us to find the incipient axis of rotation in the complicated cases which are almost inaccessible by means of the elementary principles of rotation.

130 Thus, when the centres of oscillation and percussion do not coincide, as we supposed in fig. 5. and 12. Suppose, first, that they do coincide, and find the position of the axis *a l*, and the angular velocity of the rotation. Then find the centre of percussion, the axis P*p*, and the momentum round it, and the angular velocity which this momentum would produce. Thus we have obtained two rotations round given axes, and with given angular velocities. Compound these rotations by this theorem, and we obtain the required position of the

Rotation.

true incipient axis of rotation, and the angular velocity, without the intricate process which would otherwise have been necessary.

131 If the body is of such a shape, that the forces in the plane DCG do not balance each other, we shall then discover a momentum round an axis perpendicular to this plane. Compound this rotation in the same manner with the rotation round DC.

132 Position of the axis when the centres of percussion and rotation do not coincide.

And from this simple view of the matter we learn (what would be difficult to discover in the other way), that when the centre of percussion does not coincide with that of rotation, the axis is in the plane DGC, though not perpendicular to PG. But when there is a momentum round an axis perpendicular to this plane, the incipient axis of rotation is neither perpendicular to PC, nor in a plane perpendicular to that passing through the centre in the direction of the impelling force.

We must content ourselves with merely pointing out these tracks of investigation to the curious reader, and recommending the cultivation of this most fruitful theorem of Father Frisi.

133 Concluding remarks on seamanship.

These are by no means speculations of mere curiosity, interesting to none but mathematicians; the noblest art which is practised by man must receive great improvement from a complete knowledge of this subject. We mean the art of SEAMANSHIP. A ship, the most admirable of machines, must be considered as a body in free space, impelled by the winds and waters, and continually moved round spontaneous axes of conversion, and incessantly checked in these movements. The trimming of the sails, the action of the rudder, the very disposition of the loading, all affect her versatility. An experienced seaman knows by habit how to produce and facilitate these motions, and to check or stop such as are inconvenient. Experience, without any reflection or knowledge how and why, informs him what position of the rudder produces a deviation from the course. A sort of common sense tells him, that, in order to make the ship turn her head away from the wind, he must increase the surface or the obliquity of the head sails, and diminish the power of the sails near the stern. A few other operations are dictated to him by this kind of common sense; but few even of old seamen can tell why a ship has such a tendency to bring her head up in the wind, and why it is so necessary to crowd the fore part of the ship with sails; fewer still know that a certain shifting of the loading will facilitate some motions in different cases; that the crew of a great ship running suddenly to a particular place shall enable the ship to accomplish a movement in a stormy sea which could not be done otherwise; and perhaps not one in ten thousand can tell why this procedure will be successful. But the mathematical inquirer will see all this; and it would be a most valuable acquisition to the public, to have a manual of such propositions, deduced from a careful and judicious consideration of the circumstances, and freed from that great complication and intricacy which only the learned can unravel, and expressed in a familiar manner, clothed with such reasoning as will be intelligible to the unlearned; and though not accurate, yet persuasive. Mr Bouguer, in his *Traité du Navire*, and in his *Manœuvre des Vaisseaux*, has delivered a great deal of useful information on this subject; and Mr Bezout has made a very useful abstract of these works in his *Cours de Mathematique*. But the subject is left by them in a form far too abstruse to be of any general use: and it is unfortunately so combined with or founded on a false theory of the action and resistance of fluids; that many of the propositions are totally inconsistent with experience, and many maxims of seamanship are false. This has occasioned these doctrines to be neglected altogether. Few of our professional seamen have the preparatory knowledge necessary for improving the science; but it would be a work of immense utility, and would acquire great reputation to the person who successfully prosecutes it.

Rotheram ‖ Rottenstone.

We shall mention under the article SEAMANSHIP the chief problems, and point out the mechanical principles by which they may be solved.

ROTHERAM, a town in the West Riding of Yorkshire, seated on the river Don, near which there is a handsome stone-bridge. It is a well-built place, and the market is large for provisions. W. Long. 1. 10. N. Lat. 53. 25.

ROTHSAY, a town in the isle of Bute, of which it is the capital. It is a well-built town of small houses, and about 200 families; and is within these few years much improved. It has a good pier, and is seated at the bottom of a fine bay, whose mouth lies exactly opposite to Loch Steven in Cowal. Here is a fine depth of water, a secure retreat, and a ready navigation down the Frith for an export trade. Magazines of goods for foreign parts might be most advantageously erected here. The women of this town spin yarn, the men support themselves by fishing. W. Long. 5. 0. N. Lat. 55. 50.

Rothsay gives the title of Duke to the prince of Scotland, a title which was formerly accompanied with suitable revenues, powers, and privileges. Of the origin of this title we have the following account from the pen of the learned Dr M'Leod of Glasgow. Some time between the 16th of March and the 26th of October 1398, John of Gaunt, who is styled John duke of Aquitaine and Lancaster, uncle to the king of England, and David, who is styled earl of Carrick, eldest son of the king of Scotland, met for the purpose of settling the borders, and terminating all matters in dispute. At a subsequent interview between the same parties, David is styled Duke of Rothsay. "This innovation probably proceeded on an idea, to which the interview of the two princes might naturally give rise, that it was unsuitable, and unworthy of the Scottish national dignity, that the princes of England should enjoy a title of nobility, which was esteemed to be of higher rank than that possessed by the hereditary prince of Scotland." And this, in the opinion of our author, was the occasion of introducing the title of Duke into Scotland.

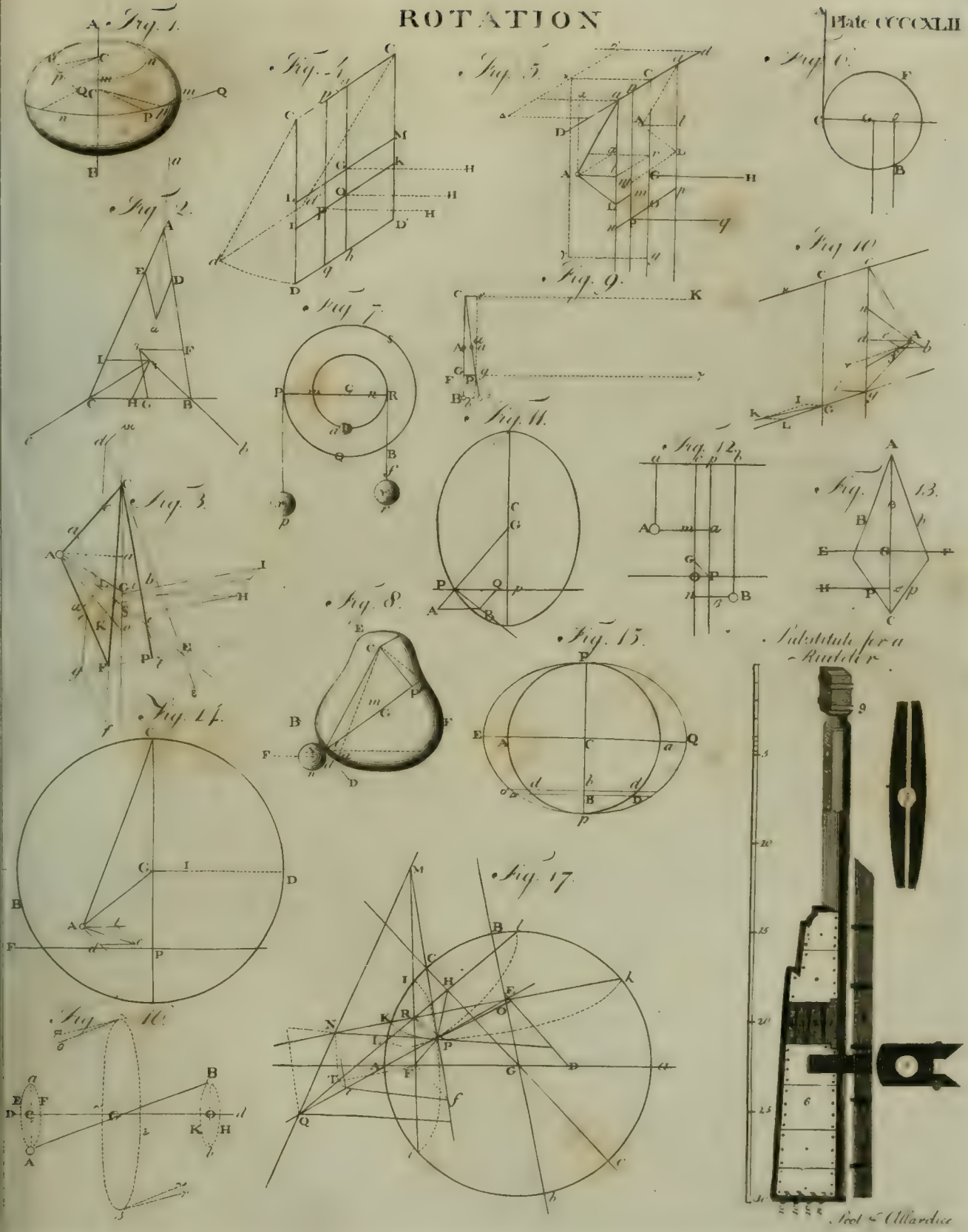
ROTTBŒLLIA, in botany; a genus of the digynia order, belonging to the triandia class of plants. The rachis is jointed, roundish, and in many cases filiform; the calyx is ovate, lanceolated, flat, simple, or bipartite; the florets are alternate on the winding rachis.

ROTONDO, or ROTUNDO, in architecture, an appellation given to any building that is round both within and without; whether it be a church, a saloon, or the like. The most celebrated rotundo of the ancients is the pantheon at Rome. See PANTHEON.

ROTTEN-STONE, a mineral found in Derbyshire and

ROTATION

Plate CCCCXLII



Rottenneſs Rotterdam.

and uſed by mechanics for all ſorts of finer grinding and poliſhing, and ſometimes for cutting of ſtones. According to Ferber, it is a tripoli mixed with calcareous earth.

ROTTENNESS. See PUTREFACTION.

ROTTERDAM, is a city in the province of Holland, in E. Long. 4. 20. N. Lat. 52. ſituated on the north bank of the river Maeſe, about 37 miles ſouth of Amſterdam, nine ſouth-eaſt of the Hague, and 15 to the eaſtward of Briel. It is a large and populous city, of a triangular figure, handſomely built of brick, the ſtreets wide and well paved. There are ten gates to the town, ſix of which are at the land ſide and four at the ſide of the Maeſe. It is ſuppoſed to take its name from the *Roter*, or *Rotter*, a little river that falls into the canals of this city, and from *Dam*, a dike. It is uncertain when it was firſt built; and though it is ſuppoſed to be very ancient, yet we find no mention made of it before the 13th century. In the year 1270 it was ſurrounded with ramparts, and honoured with ſeveral privileges; but 27 years after it was taken by the Flemings. In the year 1418, Brederode chief of the Haeks made himſelf maſter of it; ſince which time it has continued yearly to increaſe by means of the conveniency of its harbour. Its arms are vert, a pale argent, quarterly in a chief on the firſt and third, or, a lion ſpotted ſable, on the ſecond and fourth a lion ſpotted gules.

Rotterdam is not reckoned one of the principal cities of the province, becauſe it has not been always in its preſent flouriſhing condition. The Dutch call it The firſt of the ſecond rank, whereas it ought to be eſteemed the ſecond of the firſt, being, next to Amſterdam, the moſt trading town in the United Provinces. Its port is very commodious; for the canals, which run through moſt parts of the town, bring the ſhips, ſome of 200 or 300 ton, up to the merchant's door; a conveniency for loading and unloading which is not to be found in other places. The great ſhips go up into the middle of the town by the canal into which the Maeſe enters by the old head, as it comes out by the new. A ſtranger, upon his firſt entering this place, is aſtoniſhed at the beautiful confuſion of chimneys intermixed with tops of trees with which the canals are planted, and ſtreamers of veſſels; inſomuch that he can hardly tell whether it be fleet, city, or foreſt. The Harring Vliet is a very fine ſtreet; moſt of the houſes are new, and built of hewn ſtone; but the grandeſt as well as moſt agreeable ſtreet in Rotterdam is the Bomb Quay, which lies parallel with the Maeſe; on one ſide it is open to the river, and the other is ornamented with a grand facade of the beſt houſes in the city, inhabited chiefly by the Engliſh; they are five or ſix ſtories high, maſſy and very clumſy; wherever there is any attempt at ornament, it is the worſt that can be conceived. One ſees no Grecian architecture, except Doric entablatures, ſtuck upon the top of the upper ſtory, without pilaſters; Ionic volutes, turned often the wrong way, and an attempt at Corinthian capitals, without any other part of the order. The doors are large, and ſtuck with great knobs and clumſy carving; you aſcend to them, not in front, but by three or four ſteps going up on each ſide, and you are aſſiſted by iron rails of a moſt immenſe thickneſs. Theſe houſes are almoſt all window; and the window ſhutters and frames being painted green, the glaſs has all a green caſt, which is helped by the reflection from the trees that overſhadow their houſes, which, were it not for this circumſtance, would be intolerably hot, from their vicinity to the canals. Moſt of the houſes have looking glaſſes placed on the outſides of the windows, on both ſides, in order that they may ſee every thing which paſſes up and down the ſtreet. The ſtair-caſes are narrow, ſteep, and come down almoſt to the door. In general, the houſes riſe with enormous ſteep roofs, turning the gable end to the ſtreet, and leaning conſiderably forward, ſo that the top often projects near two feet beyond the perpendicular. The Bomb Quay is ſo broad, that there are diſtinct walks for carriages and foot-paſſengers, lined and ſhaded with a double row of trees.—You look over the river on ſome beautiful meadows, and a fine avenue of trees, which leads to the peſt-houſe: it ſeems to be an elegant building, and the trees round it are ſo diſpoſed as to appear a thick wood. This ſtreet is at leaſt half a mile in length, and extends from the old to the new head, the two places where the water enters to fill the canals of this extenſive city. When water runs through a ſtreet, it then aſſumes the name of a canal, of which kind the Heeren-fleet has the pre-eminence; the houſes are of free-ſtone, and, very lofty; the canal is ſpacious, and covered with ſhips: at one end ſtands the Engliſh church, a neat pretty building, of which the biſhop of London is ordinary.

Rotterdam.

This port is much more frequented by the Britiſh merchants than Amſterdam, inſomuch that, after a froſt, when the ſea is open, ſometimes 300 ſail of Britiſh veſſels ſail out of the harbour at once. There is always a large number of Britiſh ſubjects who reſide in this town, and live much in the ſame manner as in Great Britain. The reaſon of the great traffic between this place and England, is becauſe the ſhips can generally load and unload, and return to England from Rotterdam, before a ſhip can get clear from Amſterdam and the Texel. Hence the Engliſh merchants find it cheaper and more commodious, after their goods are arrived at Rotterdam, to ſend them in boats over the canals to Amſterdam. Another great advantage they have here for commerce is, that the Maeſe is open, and the paſſage free from ice, much ſooner in the ſpring than in the Y and Zuyder-ſea, which lead to Amſterdam.

Peckam's Tour thro' Holland, &c.

The glaſs-houſe here is one of the beſt in the ſeven provinces; it makes abundance of glaſs-toys and enamelled bowls, which are ſent to India, and exchanged for china-ware, and other oriental commodities.

The college of admiralty here is called the *college of the Maeſe*, the chief of all Holland and the United Provinces. The lieutenant-general, admiral of Holland, is obliged to go on board of a Rotterdam ſhip in the Maeſe when he goes to ſea, and then he commands the ſquadron of the Maeſe.

On the eaſt ſide of the city there is a large baſon and dock, where ſhip-carpenters are continually employed for the uſe of the admiralty, or of the Eaſt Indi company. But the largeſt ſhips belonging to the admiralty of Rotterdam are kept at Helvoetſluys, as the moſt commodious ſtation, that place being ſituated on the ocean; for it requires both time and trouble to work a large ſhip from the dock of Rotterdam to the ſea.

Rotterdam has four Dutch churches for the eſtabliſhed religion. There is one thing very remarkable

in

Rotterdam || Rouen.

in reſpect to the great church, that the tower which leaned on one ſide was ſet up ſtraight in the year 1655, as appears by the inſcription engraven on braſs at the bottom of the tower within-ſide. In the choir of this church are celebrated, with no ſmall ſolemnity, the promotions made in the Latin ſchools. Beſides, there are two Engliſh churches, one for thoſe of the church of England and the other for the Preſbyterians; and one Scotch church; as likewiſe one Lutheran, two Armenian, two Anabaptiſt, four Roman Catholic chapels, and one Jewiſh ſynagogue.

Though the public buildings here are not ſo ſtately as thoſe of Amſterdam and ſome other cities, yet there are ſeveral of them well worth ſeeing. The great church of St Laurence is a good old building, where are many ſtately monuments of their old admirals. From the top of this church one may ſee the Hague, Delft, Leyden, Dort, and moſt of the towns of ſouth Holland. There are ſeveral fine market-places, as three fiſh-markets, the great market, the new-market, and the hogs-market. The Stadthouſe is an old building, but the chambers large and finely adorned. The magazines for fitting out their ſhips are very good ſtructures. The Exchange is a noble building, begun in the year 1720, and finiſhed in 1736. Upon the Great Bridge in the market-place there is a fine braſs ſtatue erected to the great Eraſmus, who was born in this city in 1467, and died at Baſil in Switzerland. He is repreſented in a furred gown, and a round cap, with a book in his hand. The ſtatue is on a pedeſtal of marble, ſurrounded with rails of iron. Juſt by, one may ſee the houſe where this great man was born, which is a very ſmall one, and has the following diſtich written on the door:

Ædibus his ortus, mundum decoravit, Eraſmus,
Artibus, ingenio, religione, fide.

Rotterdam and the whole of the United Provinces are now in the poſſeſſion of the French Republic. See Revolution and *United Provinces*.

ROTULA, in anatomy, the ſmall bone of the knee. called alſo *patella*.

ROTUNDUS, in anatomy, a name given to ſeveral muſcles otherwiſe called *teres*.

ROUAD. See Aradus.

ROUANE, or Roane, an ancient and conſiderable town of France, in Lower Forez, with the title of a duchy; ſeated on the river Loire, at the place where it begins to be navigable for boats. E. Long. 4. 9. N Lat. 46. 2.

ROUCOU, in dyeing, the ſame with Anotta and Bixa.

ROUEN, a city of France, and capital of Normandy, had an archbiſhop's ſee, a parliament, a mint, a handſome college, an academy, two abbeys, and an old caſtle. It is ſeven miles in circumference, and ſurrounded with ſix ſuburbs; and contained before the revolution 35 pariſhes, and 24 convents for men and women. The metropolitan church has a very handſome front, on which are two lofty ſteeples, whence there is a fine view of the town and country. The great bell is 13 feet high and 11 in diameter. The church of the Benedictine abbey is much admired by travellers. The parliament-houſe is adorned with beautiful tapeſtry and fine-pictures. There are a great number of fountains, though the houſes are ordinary; but the walk upon the quay is very pleaſant, and there are 13 gates from thence into the city. The number of the inhabitants are about 60,000, and they have ſeveral woollen manufactures. It is ſeated on the river Seine; and the tide riſes ſo high, that veſſels of 200 tons may come up to the quay: but one of the greateſt curioſities is the bridge, of 270 paces in length, ſuported by boats, and conſequently is higher or lower according to the tide. It is paved and there are ways for foot-paſſengers on each ſide, with benches to ſit upon; and coaches may paſs over it at any hour of the day or night. It is often called *Roan* by Engliſh hiſtorians; and is 50 miles ſouth-weſt of Amiens, and 70 north-weſt of Paris.

Rouen || Rovigo.

Though large, and enriched by commerce, Rouen is not an elegant place. The ſtreets are almoſt all narrow, crooked, and dirty; the buildings old and irregular. It was fortified by St Louis in 1253, but the walls are now demoliſhed. The environs, more peculiarly the hills which overlook the Seine, are wonderfully agreeable, and covered with magnificent villas. E. Long. 1. 10. N. Lat. 49. 26.

ROVERE, or Roveredo, a ſtrong town of the Tyrol, on the confines of the republic of Venice; ſeated on the river Adige, at the foot of a mountain, and on the ſide of a ſtream, over which there is a bridge, defended by two large towers and a ſtrong caſtle, 10 miles ſouth of Trent. The town is tolerably well built, and governed by a chief magiſtrate, ſtyled a *Podeſtat*. There are ſeveral churches and convents, that contain nothing worthy of notice. The moſt remarkable thing, and what they call the great *wonder of Roveredo*, is its ſpinning-houſe for a manufacture of ſilk, in which they have a great trade here to the fairs of Bolzano. They have alſo a very good trade in wine. Betwixt Trent and Roveredo is the ſtrong fort of Belem, belonging to the houſe of Auſtria. It is ſituated on a rock, and commands the roads at the foot of the mountain. E. Long. 11. 1. N. Lat. 46. 12.

ROUERGUE, a province of France, in the government of Guienne; bounded on the eaſt by the Cevennes and Gevaudan, on the weſt by Querci, on the north by the ſame and Auvergne, and on the ſouth by Languedoc. It is 75 miles in length, and 50 in breadth; not very fertile, but feeds a number of cattle, and has mines of copper, iron, alum, vitriol, and ſulphur. It is divided into a county, and the upper and lower marche. Rhodez is the capital town.

ROVIGNO, a populous town of Italy, in Iſtria, with two good harbours, and quarries of fine ſtone. It is ſeated in a territory which produces excellent wine, in a peninſula on the weſtern coaſt. E. Long. 13. 53. N. Lat. 45. 14.

ROVIGO, is a town of Italy, in the territory of Venice, and capital of the Poleſin di Rovigo, in E. Long. 12. 25. N. Lat. 45. 6. It is a ſmall place, poorly inhabited, and encompaſſed with ruinous walls. Formerly it belonged to the duke of Ferrara, but has been ſubject to the Venetians ſince 1500, and is famous for being the birth-place of that learned man Cœlius Rhodoginus. It was built upon the ruins of Adria, anciently a noble harbour one mile from Rovigo, that gave name to the gulph, but now a half-drowned village, inhabited by a few fiſhermen.

ROUND.

Roundelay || Rounds.

ROUNDELAY, or Roundo, a ſort of ancient poem, derived its name, according to Menage, from its form, and becauſe it ſtill turns back again to the firſt verſe, and thus goes round. The common roundelay conſiſts of 13 verſes, eight of which are in one rhyme and five in another. It is divided into couplets; at the end of the ſecond and third of which the beginning of the roundelay is repeated; and that, if poſſible, in an equivocal or punning ſenſe. The roundelay is a popular poem in France, but is little known among us. Marot and Voiture have ſucceeded the beſt in it. Rapin remarks, that if the roundelay be not very exquiſite, it is intolerably bad. In all the ancient ones, Menage obſerves, that the verſe preceding has a leſs complete ſenſe, and yet joins agreeably with that of the cloſe, without depending neceſſarily thereon. This rule, well obſerved, makes the roundelay more ingenious, and is one of the fineſſes of the poem. Some of the ancient writers ſpeak of the roundelay or roundel as a kind of air appropriated to dancing; and in this ſenſe the term ſeems to indicate little more than dancing in a circle with the hands joined.

ROUND-House, a kind of priſon for the nightly watch in London to ſecure diſorderly perſons till they can be carried before a magiſtrate.

Round-Houſe, in a ſhip, the uppermoſt room or cabin on the ſtern of a ſhip, where the maſter lies.

ROUNDS, in military matters, a detachment from the main-guard, of an officer or a non-commiſſioned officer and ſix men, who go round the rampart of a garriſon, to liſten if any thing be ſtirring without the place, and to ſee that the centinels be diligent upon their duty, and all in order. In ſtrict garriſons the rounds go every half-hour. The centinels are to challange at a diſtance, and to reſt their arms as the round paſſes. All guards turn out, challenge, exchange the parole, and reſt their arms, &c.

Rounds are ordinary and extraordinary. The ordinary rounds are three: the town-major's round, the grand-round, and the viſiting-round.

Manner of going the Rounds. When the town-major goes his round, he comes to the main guard, and demands a ſerjeant and four or ſix men to eſcort him to the next guard; and when it is dark, one of the men is to carry a light.

As ſoon at the ſentry at the guard perceives the round coming, he ſhall give notice to the guard, that they may be ready to turn out when ordered; and when the round is advanced within about 20 or 30 paces of the guard, he is to challenge briſkly; and when he is anſwered by the ſerjeant who attends the round, *Town major's round*, he is to ſay, *Stand round!* and reſt his arms; after which he is to call out immediately, *Serjeant, turn out the guard, town-major's round.* Upon the ſentry calling, the ſerjeant is to turn out the guard immediately, drawing up the men in good order with ſhouldered arms, the officer placing himſelf at the head of it, with his arms in his hand. He then orders the ſerjeant and four or ſix men to advance toward the round, and challenge: the ſerjeant of the round is to anſwer, *Town major's round*; upon which the ſerjeant of the guard replies, *Advance, ſerjeant, with the parole!* at the ſame time ordering his men to reſt their arms. The ſerjeant of the round advances alone, and gives the ſerjeant of the guard the parole in his ear, that none elſe may hear it; during which period the ſerjeant of the guard holds the ſpear of his halbert at the other's breaſt. The ſerjeant of the round then returns to his poſt, whilſt the ſerjeant of the guard leaving his men to keep the round from advancing, gives the parole to his officer. This being found right, the officer orders his ſerjeant to return to his men; ſays, *Advance, town-major's round!* and orders the guard to reſt their arms; upon which the ſerjeant of the guard orders his men to wheel back from the centre, and form a lane, through which the town-major is to paſs (the eſcort remaining where they were), and go up to the officer and give him the parole, laying his mouth to his ear. The officer holds the ſpear of his eſponton at the town major's breaſt while he gives him the parole.

The deſign of rounds is not only to viſit the guards, and keep the centinels alert; but likewiſe to diſcover what paſſes in the outworks, and beyond them.

Rouſſillon, Rouſſeau.

ROUSSILLON, a province of France, in the Pyrenees, bounded on the eaſt by the Mediterranean ſea, on the weſt by Cerdagne, on the north by Lower Languedoc, and on the ſouth by Catalonia, from which it is ſeparated by the Pyrenees. It is a fertile country, about 50 miles in length, and 25 in breadth, and remarkable for its great number of olive-trees. Perpignan is the capital town.

ROUSSEAU (James), an eminent painter, was born at Paris in the year 1630, and ſtudied firſt under Swanevelt, who had married one of his relations; after which he improved himſelf by travelling into Italy, practiſing ſolely in perſpective, architecture, and landſcape. On his return home, he was employed at Marly. He diſtinguiſhed himſelf very much in painting buildings, and by his knowledge of, and attention to, the principles of perſpective. Louis XIV. employed him to decorate his hall of devices at St Germaine-en-Laie, where he repreſented the operas of Lulli. But being a Proteſtant, he quitted France on the perſecution of his brethren, and retired to Swiſſerland. Louis invited him back; he refuſed, but ſent his deſigns, and recommended a proper perſon to execute them. After a ſhort ſtay in Swiſſerland, he went to Holland; whence he was invited over to England by Ralph duke of Montague, to adorn his new houſe in Bloomſbury, where he painted much. Some of his pictures, both in landſcape and architecture, are over doors at Hampton-court; and he etched ſome of his own deſigns. His perſpectives having been moſt commonly applied to decorate courts or gardens, have ſuffered much from the weather. Such of them as remain are monuments of an excellent genius. The colours are durable and bright, and the choice of them moſt judicious. He died in Soho-ſquare, about the year 1693, aged 63.

Rousseau (John Baptiſt), a celebrated French poet, was born at Paris in April 1671. His father, who was a ſhoemaker in good circumſtances made him ſtudy in the beſt college of Paris, where he diſtinguiſhed himſelf by his abilities. He at length applied himſelf entirely to poetry, and ſoon made himſelf known by ſeveral ſhort pieces, that were filled with lively and agreeable images, which made him ſought for by perſons of the firſt rank, and men of the brighteſt genius. He was admitted in quality of *eleve*, or pupil, into the academy of Inſcriptions and Belles Lettres, in 1701,

Rouſſeau. and almoſt all the reſt of his life attached himſelf to ſome of the great lords. He attended marſhall Tallard into England, in quality of ſecretary, and here contracted a friendſhip with St Evremond. At his return to Paris, he was admitted into the politeſt company, lived among the courtiers, and ſeemed perfectly ſatisfied with his ſituation; when, in 1708, he was proſecuted for being the author of ſome couplets, in which the characters of ſeveral perſons of wit and merit were blackened by the moſt atrocious calumnies. This proſecution made much noiſe; and Rouſſeau was baniſhed in 1712 out of the kingdom, to which he was never more to return, by a decree of the parliament of Paris. However, he always ſteadily denied, and even on his death-bed, his being the author of theſe couplets.—From the date of this ſentence he lived in foreign countries, where he found illuſtrious protectors. The count de Luc, ambaſſador of France, in Swiſſerland, took him into his family, and ſtudied to render his life agreeable. He took him with him to the treaty of Baden in 1714, where he was one of the plenipotentiaries, and preſented him to prince Eugene, who entertaining a particular eſteem for him, took him to Vienna, and introduced him to the emperor's court. Rouſſeau lived about three years with prince Eugene; but having loſt his favour by ſatiriſing one of his miſtreſſes, he retired to Bruſſels, where he afterwards uſually reſided, and where he met with much attention and much generoſity, as we ſhall ſoon mention.—It was here that his diſputes with Voltaire commenced, with whom he had become acquainted at the college of Louis the Great, who then much admired his turn for poetry. At that time Voltaire aſſiduouſly cultivated the acquaintance of Rouſſeau, and made him a preſent of all his works; and Rouſſeau, flattered by his reſpect, announced him as a man who would one day be a glory to the age. The author of the Henriad continued to conſult him about his productions, and to laviſh on him the higheſt encomiums, while their friendſhip daily increaſed. When they again met at Bruſſels, however, they harboured the blackeſt malice againſt one another. The cauſe of this enmity, as Rouſſeau and his friends tell the ſtory, was a lecture which he had compoſed from his Epiſtle to Julia, now Urania. This piece frightened Voltaire, as it plainly diſcovered his rage againſt him. The young man, vexed at theſe calumnies, underſtood the whole as thrown out againſt him. This is what Rouſſeau aſſerts. But his adverſaries, and the friends of the poet whom he cried down, ſuſpected him, perhaps rather raſhly, of having employed ſarcaſms, becauſe he thought that his own reputation was in danger of being eclipſed by that of his rival. What is very ſingular, theſe two celebrated characters endeavoured each of them to prepoſſeſs the public with a bad opinion of the other, which they themſelves never entertained in reality, and to ſmother in their breaſt that eſteem for each other which, in defiance of all their exertions, ſtill held its place. Rouſſeau, from the period of this diſpute, always repreſented Voltaire as a buffoon, as a writer poſſeſſing neither taſte nor judgment, who owed all his ſucceſs to a particular mode which he purſued. As a poet he conſidered him as inferior to Lucan, and little ſuperior to Pradon. Voltaire treated him ſtill worſe. Rouſſeau, according to him, was nothing better than a plagiariſt, who could make ſhift to rhime, but could not make Rouſſeau. any reflections; that he had nothing but the talent of arranging words, and that he had even loſt that in foreign countries. He thus addreſſes him, in a piece little known:

Auſſitôt le Dieu qui m'inſpire
T'arracha le luth et la lyre
Qu'avoient déſhonorés tes mains;
Tu n'es plus qu'un reptile immond,
Rebut du Parnaſſe et du monde
Enſéveli dans tes venins.

In conſequence of the little eſteem in which Rouſſeau was held at Bruſſels, he could never forget Paris. The grand-prior of Vendome, and the baron de Breteuil, ſolicited the regent duke of Orleans to allow him to return; which favour was obtained. But our poet, before he would make uſe of the *lettres de rapel* iſſued in his favour, demanded a review of his proceſs, which he wiſhed to be repealed, not as a matter of favour, but by a ſolemn judgment of court; but his petition was refuſed. He then came over, in 1721, to England, where he printed *A Collection of his Works*, in 2 vols 12mo, at London. This edition, publiſhed in 1723, brought him near 10,000 crowns, the whole of which he placed in the hands of the Oſtend company. The affairs of this company, however ſoon getting into confuſion, all thoſe who had any money in their hands loſt the whole of it, by which unfortunate event Rouſſeau, when arrived at that age when he ſtood moſt in need of the comforts of fortune, had nothing to depend upon but the generoſity of ſome friends. Boutet, public notary in Paris, was peculiarly generous and attentive to him. He found a ſtill greater aſylum in the Duke d'Aremberg, whoſe table was open to him at all times; who being obliged in 1733 to go into the army in Germany, ſettled on him a penſion of 1500 livres. But unfortunately he ſoon loſt his good opinion, having been imprudent enough to publiſh in a Journal (of which Voltaire accuſed him), that the duke d'Aremberg was the author of thoſe verſes for which he himſelf had been baniſhed France. He was therefore diſmiſſed from his table, and his pride would not allow him to accept of the penſion after this rupture. Bruſſels now became inſupportable to him; and the count du Luc, and M. de Senozan, receiver-general of the church revenue, being informed of his diſappointments, invited him to come privately to Paris, in the hopes of procuring a diminution of the period of his baniſhment. Some time previous to this Rouſſeau had publiſhed two new letters; one to P. Brumoi, on tragedy; the other to Rollin, on hiſtory. It is ſaid, he expected from his letter to Brumoi to get the favour of all the Jeſuits; and from the one to Rollin, the patronage of the Janſeniſts. He had likewiſe written an Ode, in praiſe of Cardinal de Fleury, on Peace, which met with a favourable reception, although it was not equal to ſome of his former pieces. He imagined his return to Paris would be found no difficult matter. He attempted it, and found he could not obtain a paſs for a ſingle year. Some ſay, that Rouſſeau had irritated ſome perſons in power, by an allegory, called *The judgment of Pluto*; in which piece he deſcribes one of the principal judges, whoſe

Rouſſeau. whoſe ſkin Pluto had cauſed to be taken off, and ſtretched out on the ſeat in the bench. This ſatire, joined to the ſecret machinations of enemies, rendered all the attempts of his friends to procure his return abortive. After having ſtaid three months at Paris, he returned to Bruſſels in February 1740, at which place he died March 17. 1741, ſtrongly impreſſed with religious ſentiments. Immediately before he received the viaticum, he proteſted he was not the author of thoſe horrid verſes which had ſo much embittered his life; and this declation, in the opinion of the virtuous part of mankind, will be conſidered as a ſufficient proof of his innocence. Some have ſaid that Rouſſeau was profane, troubleſome, capricious, froward, vindictive, envious, a flatterer, and a ſatiriſt. Others again repreſent him as a man full of candour and openneſs, a faithful and grateful friend, and as a Chriſtian affected with a ſenſe of religion.—Amidſt ſuch widely varied accounts it is difficult to form an opinion of his character. Such of our readers as wiſh to know more of this great poet may conſult the Dictionary of M. Chaupepié, written with as much preciſion as impartiality, who endeavours to give a juſt idea of his character. From what he ſays, it does not appear that Rouſſeau can be cleared from the accuſation brought againſt him of having attacked his benefactors. We believe he may be much more eaſily freed from the imputation brought againſt him by ſome of having diſowned his father: for what occaſion had Rouſſeau to conceal the obſcurity of his birth? It exalted his own merit.

M. Seguy, in concert with M. the prince of la Tour Taſſis, has given a very beautiful edition of his works, agreeable to the poet's laſt corrections. It was publiſhed in 1743, at Paris, in 3 vols. 4to, and in 4 vols. 12mo, containing nothing but what was acknowledged by the author as his own. It contains, 1. Four Books of Odes, of which the firſt are ſacred odes, taken from the Pſalms. "Rouſſeau (ſays Freron) unites in himſelf Pindar, Horace, Anacreon, and Malherbe. What fire, what genius, what flights of imagination, what rapidity of deſcription, what variety of affecting ſtrokes, what a crowd of brilliant compariſons, what richneſs of rhymes, what happy verſification; but eſpecially what inimitable expreſſion! His verſes are finiſhed in the higheſt ſtyle of perfection that French verſe is capable of aſſuming." The lyric compoſitions of Rouſſeau are, in general, above mediocrity. All his odes are not, however, of equal merit. The moſt beautiful are thoſe which he has addreſſed to count du Luc, to Malherbe, to prince Eugene, to Vendôme, to the Chriſtian princes; his Odes on the death of the prince de Conti, on the battle of Peterwaradin; and the Ode to Fortune, altho' there are certainly ſome few weak ſtanzas to be met with in it. There is conſiderable neatneſs in the compoſition of the Ode to a Widow, in his ſtanzas to the Abbé de Chaulieu, in his addreſſes to Roſſignol, in his Odes to count de Bonneval, to M. Duche, and to count de Sinzindorf; and it is to be lamented that he wrote ſo few pieces of this kind, from which his genius ſeemed to lead him with difficulty. 2. Two books of Epiſtles, in verſe. Although theſe do not want their beauties, yet there prevails too much of a miſanthropic ſpirit in them, which takes away greatly from their excellence. He makes too frequent mention of his enemies and his misfortunes; he diſplays thoſe principles which are ſupported leſs on the baſis of truth than on thoſe various paſſions which ruled his mind at the time. He puts forth his anger in paradoxes. If he be reckoned equal to Horace in his odes, he is far inferior in his epiſtles. There is much more philoſophy in the Roman poet than in him. 3. *Cantatas*. He is the father of this ſpecies of poetry, in which he ſtands unrivalled. His pieces of this ſort breathe that poetical expreſſion, that pictureſque ſtyle, thoſe happy turns, and thoſe eaſy graces, which conſtitute the true character of this kind of writing. He is as lively and impetuous as he is mild and affecting, adapting himſelf to the paſſions of thoſe perſons whom he makes to ſpeak. "I confeſs (ſays M. de la Harpe) that I find the cantatas of Rouſſeau more purely lyric than his odes, although he riſes to greater heights in theſe. I ſee nothing in his cantatas but bold and agreeable images. He always addreſſes himſelf to the imagination, and he never becomes either too verboſe or too prolix. On the contrary, in ſome of the beſt of his odes, we find ſome languiſhing ſtanzas, ideas too long delayed, and verſes of inexcuſable meanneſs." 4. *Allegories*, the moſt of which are happy, but ſome of them appear forced. 5. *Epigrams*, after the manner of Martial and Marot. He has taken care to leave out of this edition thoſe pieces which licentiouſneſs and debauchery inſpired. They bear, indeed, as well as his other pieces, the marks of genius; but ſuch productions are calculated only to diſhonour their authors, and corrupt the heart of thoſe who read them. 5. A book of *Poems on Various Subjects*, which ſometimes want both eaſe and delicacy. The moſt diſtinguiſhed are two eclogues, imitated from Virgil. 6. Four comedies in verſe; the *Flatterer*, whoſe character is well ſupported; the *Imaginary Forefathers*, a piece which had much leſs ſucceſs, although it affords ſufficiently good ſentiment; the *Capricious Man*, and the *Dupe of Herſelf*, pieces of very inconſiderable merit. 7. Three comedies in proſe; the *Coffee-houſe*, the *Magic Girdle*, and the *Madragore*, which are little better than his other theatrical pieces. The theatre was by no means his forte; he had a genius more ſuited for ſatire than comedy, more akin to Boileau's than Moliere's. 8. A *Collection of Letters*, in proſe. In this edition he has ſelected the moſt intereſting.—There is a larger collection in 5 volumes. This laſt has done at the ſame time both injury and honour to his memory. Rouſſeau in it ſpeaks both in favour of and againſt the very ſame perſons. He appears too haſty in tearing to pieces the characters of thoſe who diſpleaſed him. We behold in them a man of a ſteady character and an elevated mind, who wiſhes to return to his native country only that he might be enabled completely to juſtify his reputation. We ſee him again correſponding with perſons of great merit and uncommon integrity, with the Abbé d'Olivet, Racine the ſon, the poets La Foſſe and Duche, the celebrated Rollin, M. le Franc de Pompignan, &c. &c. We meet alſo with ſome anecdotes and exact judgments of ſeveral writers. A bookſeller in Holland has publiſhed his port-folio, which does him no honour. There are, indeed, ſome pieces in this wretched collection which did come from the pen of Rouſſeau; but he is leſs to be blamed for them than they are who have drawn theſe works from that oblivion to which our great poet had

Rouſſeau. enlightened them. A pretty good edition of his *Select Pieces* appeared at Paris in 1741, in a ſmall 12mo volume. His portrait, engraved by the celebrated Aved, his old friend, made its appearance in 1778, with the following motto from Martial:

Certior in noſtro carmine vultus erit.

Rousseau (John-James), was born at Geneva June 28. 1712. His father was by profeſſion a clock and watch-maker. At his birth, which, he ſays, was the firſt of his misfortunes, he endangered the life of his mother, and he himſelf was for a long time after in a very weak and languiſhing ſtate of health; but as his bodily ſtrength increaſed, his mental powers gradually opened, and afforded the happieſt preſages of future greatneſs. His father, who was a citizen of Geneva, was a well-informed tradeſman; and in the place where he wrought he kept a Plutarch and a Tacitus, and theſe authors of courſe ſoon became familiar to his ſon. A raſh juvenile ſtep occaſioned his leaving his father's houſe. "Finding himſelf a fugitive, in a ſtrange country, and without money or friends, he changed (ſays he himſelf) his religion, in order to procure a ſubſiſtence." Bornex, biſhop of Anneci, from whom he ſought an aſylum, committed the care of his education to Madame de Warrens, an ingenious and amiable lady, who had in 1726 left part of her wealth, and the Proteſtant religion, in order to throw herſelf into the boſom of the church. This generous lady ſerved in the triple capacity of a mother, a friend, and a lover, to the new proſelyte, whom ſhe regarded as her ſon. The neceſſity of procuring for himſelf ſome ſettlement, however, or perhaps his unſettled diſpoſition, obliged Rouſſeau often to leave this tender mother.

He poſſeſſed more than ordinary talents for muſic; and the Abbé Blanchard flattered his hopes with a place in the royal chapel, which he, however, failed in obtaining for him; he was therefore under the neceſſity of teaching muſic at Chamberi. He remained in this place till 1741, in which year he went to Paris, where he was long in very deſtitute circumſtances. Writing to a friend in 1743, he thus expreſſes himſelf: "Every thing is dear here, but eſpecially bread." What an expreſſion; and to what may not genius be reduced! Meanwhile he now began to emerge from that obſcurity in which he had hitherto been buried. His friends placed him with M. de Montaigu, ambaſſador from France to Venice. According to his own confeſſion, a proud miſanthropy and a peculiar contempt of the riches and pleaſures of this world, conſtituted the chief traits in his character, and a miſunderſtanding ſoon took place between him and the ambaſſador. The place of depute, under M. Dupin, farmer-general, a man of conſiderable parts, gave him ſome temporary relief, and enabled him to be of ſome benefit to Madame de Warrens his former benefactreſs. The year 1750 was the commencement of his literary career. The academy of Dijon had propoſed the following queſtion: "Whether the *revival* of the arts and ſciences has contributed to the refinement of manners?" Rouſſeau at firſt inclined to ſupport the affirmative. "This is the *jeas afinorum* (ſays a philoſopher, at that time a friend of his), take the negative ſide of the queſtion, and I'll promiſe you the greateſt ſucceſs."

His diſcourſe againſt the ſciences, accordingly, having been found to be the beſt written, and replete with the deepeſt reaſoning, was publicly crowned with the approbation of that learned body. Never was a paradox ſupported with more eloquence; it was not however a new one; but he enriched it with all the advantages which either knowledge or genius could confer on it. Immediately after its appearance, he met with ſeveral opponents of his tenets, which he defended; and from one diſpute to another, he found himſelf involved in a formidable train of correſpondence, without having ever almoſt dreamed of ſuch oppoſition. From that period he decreaſed in happineſs as he increaſed in celebrity. His "Diſcourſe on the cauſes of inequality among mankind, and on the origin of ſocial compacts," a work full of almoſt unintelligible maxims and wild ideas, was written with a view to prove that mankind are equal; that they were born to live apart from each other; and that they have perverted the order of nature in forming ſocieties. He beſtows the higheſt praiſe on the ſtate of nature, and depreciates the idea of every ſocial compact. This diſcourſe, and eſpecially the dedication of it to the republic of Geneva, are the *chef-d'œuvres* of that kind of eloquence of which the ancients alone had given us any idea. By preſenting this performance to the magiſtrates, he was received again into his native country, and reinſtated in all the privileges and rights of a citizen, after having with much difficulty prevailed on himſelf to abjure the Catholic religion. He ſoon, however, returned to France, and lived for ſome time in Paris. He afterwards gave himſelf up to retirement, to eſcape the ſhafts of criticiſm, and follow after the regimen which the ſtrangury, with which he was tormented, demanded of him. This is an important epoch in the hiſtory of his life, as it is owing to this circumſtance, perhaps, that we have the moſt elegant works that have come from his pen. His "Letter to M. d'Alembert" on the deſign of erecting a theatre at Geneva, written in his retirement, and publiſhed in 1757, contains, along with ſome paradoxes, ſome very important and well-handled truths. This letter firſt drew down upon him the envy of Voltaire, and was the cauſe of thoſe indignities with which that author never ceaſed to load him. What is ſingular in him, is, that although ſo great an enemy to theatrical repreſentations himſelf, he cauſed a comedy to be printed, and in 1752 gave to the theatre a paſtoral (The Village Conjurer), of which he compoſed both the poetry and muſic, both of them abounding with ſentiment and elegance, and full of innocent and rural ſimplicity. What renders the Village Conjurer highly delightful to perſons of taſte, is that perfect harmony of words and muſic which everywhere pervades it; that proper connection among the parties who compoſe it; and its being perfectly correct from beginning to end. The muſician hath ſpoken, hath thought, and felt like a poet. Every thing in it is agreeable, intereſting, and far ſuperior to thoſe common affected and inſipid productions of our modern petit-dramas. His Dictionary of Muſic affords ſeveral excellent articles; ſome of them, however, are very inaccurate. "This work (ſays M. la Borde), in his Eſſay on Muſic, has need to be written over again, to ſave much trouble to thoſe who will to ſtudy it, and prevent them from falling into errors, which

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Rouſſeau. it is difficult to avoid, from the engaging manner in which Rouſſeau drags along his readers." The paſſages in it which have any reference to literature may be eaſily diſtinguiſhed, as they are treated with the agreeableneſs of a man of wit and the exactneſs of a man of taſte. Rouſſeau, ſoon after the rapid ſucceſs of his Village Conjurer, publiſhed a Letter *on* French Muſic, or rather *againſt* French muſic, written with as much freedom as livelineſs. The exaſperated partiſans of French comedy treated him with as much fury as if he had conſpired againſt the ſtate. A crowd of inſignificant enthuſiaſts ſpent their ſtrength in outcries againſt him. He was inſulted, menaced, and lampooned. Harmonic fanaticiſm went even to hang him up in effigy. Rouſſeau.

That intereſting and tender ſtyle, which is ſo conſpicuous throughout the Village Conjurer, animates ſeveral letters in the New Heloiſa, in ſix parts, publiſhed 1761, in 12mo. This epiſtolary romance, of which the plot is ill-managed, and the arrangement bad, like all other works of genius, has its beauties as well as its faults. More truth in his characters and more preciſion in his details were to have been wiſhed. The characters, as well as their ſtyle, have too much fameneſs, and their language is too affected and exaggerated. Some of the letters are indeed admirable, from the force and warmth of expreſſion, from an effervescence of ſentiments, from the irregularity of ideas which always characteriſe a paſſion carried to its height. But why is ſo affecting a letter ſo often accompanied with an unimportant digreſſion, an inſipid criticiſm, or a ſelf-contradicting paradox? Why, after having ſhone in all the energy of ſentiment, does he on a ſudden turn unaffecting? It is becauſe none of the perſonages are truly intereſting. That of St Preux is weak, and after forced. Julia is an aſſemblage of tenderneſs and pity, of elevation of ſoul and of coquetry, of natural parts and pedantry. Wolmar is a violent man, and almoſt beyond the limits of nature. In fine, when he wiſhes to change his ſtyle, and adopt that of the ſpeaker, it may eaſily be obſerved that he does not long ſupport it, and every attempt embarraſſes the author and cools the reader. In the Heloiſa, Rouſſeau's unlucky talent of rendering every thing problematical, appears very conſpicuous; as in his arguments in favour of and againſt duelling, which afford an apology for ſuicide, and a juſt condemnation of it: in his facility in palliating the crime of adultery, and his very ſtrong reaſons to make it abhorred: on the one hand, in declamations againſt ſocial happineſs; on the other, in tranſports in favour of humanity: here, in violent rhapſodies againſt philoſophers; there, by a rage for adopting their opinions: the exiſtence of God attacked by ſophiſtry, and Atheiſts confuted by the moſt irrefragable arguments; the Chriſtian religion combated by the moſt ſpecious objections, and celebrated with the moſt ſublime eulogies.

His Emilia afterwards made more noiſe than the new Heloiſa. This moral romance, which was publiſhed in 1762, in four vols 12mo, treats chiefly of education. Rouſſeau wiſhed to follow nature in every thing; and though his ſyſtem in ſeveral places differs from received ideas, it deſerves in many reſpects to be put in practice, and with ſome neceſſary modifications it has been ſo. His precepts are expreſſed with the force and dignity of a mind full of the leading truths of morality. If he has not always been virtuous, no body at leaſt has felt it more, or made it appear to more advantage. Every thing which he ſays againſt luxury ſhows the vices and conceited opinions of his age, and is worthy at once of Plato or of Tacitus. His ſtyle is peculiar to himſelf. He ſometimes, however, appears, by a kind of affected rudeneſs and aſperity, to ape at the mode of Montaigne, of whom he is a great admirer, and whoſe ſentiments and expreſſions he often clothes in a new dreſs. What is moſt to be lamented is, that in wiſhing to educate a young man as a Chriſtian he has filled his third volume with objections againſt chriſtianity. He has, it muſt be confeſſed, given a very ſublime eulogium on the Goſpel, and an affecting portrait of its divine Author: but the miracles, and the prophecies which ſerve to eſtabliſh his miſſion, he attacks without the leaſt reſerve. Admitting only natural religion, he weighs every thing in the balance of reaſon; and this reaſon being falſe, leads him into dilemmas very unfavourable to his own repoſe and happineſs. Rouſſeau.

He dwelt from 1754 in a ſmall houſe in the country near Montmorenci; a retreat which he owed to the generoſity of a farmer-general. The cauſe of his love for this retirement was, according to himſelf, "that invincible ſpirit of liberty which nothing could conquer, and in competition with which honours, fortune, and reputation, could not ſtand. It is true, this deſire of liberty has occaſioned leſs pride than lazineſs; but this indolence is inconceivable. Every thing ſtartles it; the moſt inconſiderable reciprocalities of ſocial life are to it inſupportable. A word to ſpeak, a letter to write, a viſit to pay, things neceſſary to be done, are to me puniſhments. Hear my reaſons. Although the ordinary intercourſe between mankind be odious to me, intimate friendſhip appears to me very dear; becauſe there are no mere ceremonies due to it; it agrees with the heart, and all is accompliſhed. Hear, again, why I have always ſhunned kindneſſes ſo much; becauſe every act of kindneſs requires a grateful mind, and I find my heart ungrateful, from this alone, that gratitude is a duty. Laſtly, that kind of felicity which is neceſſary for me, is not ſo much to do that which I with, as not to do what I wiſh, not to do." Rouſſeau enjoyed this felicity which he ſo much wiſhed in his retirement. Without entirely adopting that too rigorous mode of life purſued by the ancient Cynics, he deprived himſelf of every thing that could in any meaſure add fuel to this wiſhed-for luxury, which is ever the companion of riches, and which inverts even cuſtom itſelf. He might have been happy in this retreat, if he could have forgot this public which he affected to deſpiſe; but his deſire after a great name got the better of his ſelf-love, and it was this thirſt after reputation which made him introduce ſo many dangerous paragraphs in his Emilia.

The French parliament condemned this book in 1762, and entered into a criminal proſecution againſt the author, which forced him to make a precipitate retreat. He directed his ſteps towards his native country, which ſhut its gates upon him. Proſcribed in the place where he firſt drew breath, he ſought an aſylum in Switzerland, and found one in the principality of Neufchatel. His firſt care was to defend his Emilia againſt the mandate of the archbiſhop of Paris, by whom it had been anathematiſed. In 1763 he publiſhed a letter, in which he re-exhibits all his errors, ſet off with the

Rouſſeau. the moſt animated diſplay of eloquence, and in the moſt inſidious manner. In this letter he deſcribes himſelf as "more vehement than celebrated in his reſearches, but diſcreet on the whole, even againſt himſelf; ſimple and good, but ſenſible and weak; often doing evil, and always loving good; united by friendſhip, never by circumſtances, and keeping more to his opinions than to his intereſts; requiring nothing of men, and not willing to be under any obligation to them; yielding no more to their prejudices than to their will, and preſerving his own maxims as his reaſon; diſputing about religion without licentiouſneſs; loving neither impiety nor fanaticiſm, but diſliking exceſſive people more than bold ſpirits," &c. &c. From this ſpecimen, the limitations he would appoint to this portrait may eaſily be diſcovered.

The letters of La Montaigne appeared ſoon after; but this work, far leſs eloquent, and full of envious diſcuſſions on the magiſtrates and clergy of Geneva, irritated the Proteſtant miniſters without effecting a reconciliation with the clergy of the Romiſh church. Rouſſeau had ſolemnly abjured the latter religion in 1753, and, what is ſomewhat ſtrange, had then reſolved to live in France, a Catholic country. The proteſtant clergy were not fully reconciled by this change; and the protection of the king of Pruſſia, to whom the principality of Neufchatel belonged, was not ſufficient to reſcue him from that obloquy which the miniſter of Moutiers-Travers, the village to which he had retired, had excited againſt him. He preached againſt Rouſſeau, and his ſermons produced an uproar among the people. On the night between the 6th and 7th September 1765, ſome fanatics, drove on by wine and the declamations of their miniſter, threw ſome ſtones at the windows of the Genevan philoſopher, who fearing new inſults, in vain ſought an aſylum in the canton of Berne. As this Canton was connected with the republic of Geneva, they did not think proper to allow him to remain in their city, being proſcribed by that republic. Neither his broken ſtate of health, nor the approach of winter, could ſoften the hearts of theſe obdurate Spartans. In vain, to prevent them from the fear they had of the ſpreading of his opinions, did he beſeech them to ſhut him up in priſon till the ſpring; for even this favour was denied him. Obliged to ſet out on a journey, in the beginning of a very inclement ſeaſon, he reached Straſbourg in a very deſtitute ſituation. He received from Marſhal de Contades, who then commanded in that place, every accommodation which could be expected from generoſity, humanity, and compaſſion. He waited there till the weather was milder, when he went to Paris, where Mr Hume then was, who determined on taking him with him to England. After having made ſome ſtay in Paris, Rouſſeau actually ſet out for London in 1766. Hume, much affected with his ſituation and his misfortunes, procured for him a very agreeable ſettlement in the country. Our Genevan philoſopher was not, however, long ſatisfied with this new place. He did not make ſuch an impreſſion on the minds of the Engliſh as he had done on the French. His free diſpoſition, his obdurate and melancholy temper, was deemed nothing ſingularity in England. He was there looked upon as an ordinary man, and the periodical prints were filled with ſatires againſt him. In particular, they publiſhed a forged letter from the king of Pruſſia, holding up to ridicule the principles and conduct of this new Diogenes. Rouſſeau imagined there was a plot between Hume and ſome philoſophers in France to deſtroy his glory and repoſe. He ſent a letter to him, filled with the moſt abuſive expreſſions, and reproaching him for his conduct towards him. From this time he looked upon Hume as a wicked and perfidious perſon, who had brought him to England with no other view than to expoſe him to public ridicule; which fooliſh and chimerical idea was nouriſhed by ſelf-love and a reſtleſs diſpoſition. He imagined that the Engliſh philoſopher, amidſt all his kindneſſes, had ſomething diſagreeable in the manner of expreſſing them. The bad health of Rouſſeau, a ſtrong and melancholy imagination, a too nice ſenſibility, a jealous diſpoſition, joined with philoſophic vanity, cheriſhed by the falſe informations of his governeſs, who poſſeſſed an uncommon power over him; all theſe taken together, might tend to prepoſſeſs him with unfavourable ſentiments of ſome innocent freedoms his benefactor might have taken with him, and might render him ungrateful, which he thought himſelf incapable of becoming. Meanwhile, theſe falſe conjectures and probabilities ought never to have had the weight with an honeſt mind to withdraw itſelf from its friend and benefactor. Proofs are always neceſſary in caſes of this kind; and that which Rouſſeau had was by no means a certain demonſtration. The Genevan philoſopher, however, certainly returned to France. In paſſing through Amiens, he met with M. Greſſet, who interrogated him about his misfortunes and the controverſies he had been engaged in. He only anſwered, "You have got the art of making a parrot ſpeak; but you are not yet poſſeſſed of the ſecret of making a bear ſpeak." In the mean time, the magiſtrates of this city wiſhed to confer on him ſome mark of their eſteem, which he abſolutely refuſed. His diſordered imagination viewed theſe flattering civilities as nothing elſe than inſults, ſuch as were laviſhed on Sancho in the iſland of Barataria. He thought one part of the people looked upon him as like Lazarille of Tormes, who, being fixed to the bottom of a tub, with only his head out of the water, was carried from one town to another to amuſe the vulgar. But theſe wrong and whimſical ideas did not prevent him from aſpiring after a reſidence in Paris, where, without doubt, he was more looked on as a ſpectacle than in any other place whatever. On the 1ſt July 1770, Rouſſeau appeared, for the firſt time, at the regency coffee-houſe, dreſſed in ordinary clothing, having for ſome time previous to this wore an Armenian habit. He was loaded with praiſes by the ſurrounding multitude. "It is ſomewhat ſingular (ſays M. Sennebier) to ſee a man ſo haughty as he returning to the very place from whence he had been baniſhed ſo often. Nor is it one of the ſmalleſt inconſiſtencies of this extraordinary character, that he preferred a retreat in that place of which he had ſpoken ſo much ill." It is as ſingular that a perſon under ſentence of impriſonment ſhould wiſh to live in ſo public a manner in the very place where his ſentence was in force againſt him. His friends procured for him, however, liberty of ſtaying, on condition that he ſhould neither write on religion nor politics: he kept his word; for he wrote none at all. He was contented with living in a calm philoſophical manner, giving himſelf to the ſociety of a few tried friends, ſhunning the

company

Rouſſeau. company of the great, appearing to have given up all his whimſies, and affecting neither the character of a philoſopher nor a *bel eſprit*. He died of an apoplexy at Ermenon-ville, belonging to the marquis de Girardin, about ten leagues from Paris, July 2. 1778, aged 66 years. This nobleman has erected to his memory a very plain monument, in a grove of poplars, which conſtitutes part of his beautiful gardens. On the tomb are inſcribed the following epitaphs:

Ici repoſe
L'Homme de la Nature
Et de la Verite!

* His motto.

Vitam impendere Vero *.

Hic jacent Oſſa J. J. Rouſſeau.

The curious who go to ſee this tomb likewiſe ſee the cloak which the Genevan philoſopher wore. Above the door is inſcribed the following ſentence, which might afford matter for a whole book: "He is truly free, who, to accompliſh his pleaſure, has no need of *the aſſiſtance of a ſecond perſon*." Rouſſeau, during his ſtay in the environs of Lyons, married Mademoiſelle le Vaſſeur, his governeſs, a woman who, without either beauty or talents, had gained over him a great aſcendancy. She waited on him in health and in ſickneſs: But as if ſhe had been jealous of poſſeſſing him alone, ſhe drove from his mind, by the moſt perfidious inſinuations, all thoſe who came to entertain him; and when Rouſſeau did not diſmiſs them, ſhe prevented their return by invariably refuſing them admittance. By theſe means ſhe the more eaſily led her huſband into inconſiſtencies of conduct, which the originality of his character as well as of his opinions ſo much contributed to aſſiſt. Nature had perhaps but given him the embryo of his character, and art had probably united to make it more ſingular. He did not incline to aſſociate with any perſon; and as this method of thinking and living was uncommon, it procured him a name, and he diſplayed a kind of fantaſticalneſs in his behaviour and his writings. Like Diogenes of old, he united ſimplicity of manners with all the pride of genius; and a large ſtock of indolence, with an extreme ſenſibility, ſerved to render his character ſtill more uncommon. "An indolent mind (ſays he), terrified at every application, a warm, bilious, and irritable temperament, ſenſible alſo in a high degree to every thing that can affect it, appear not poſſible to be united in the ſame perſon: and yet theſe two contrarieties compoſe the chief of mine. An active life has no charms for me. I would an hundred times rather conſent to be idle than to do any thing againſt my will; and I have an hundred times thought that I would live not amiſs in the Baſtille, provided I had nothing to do but juſt continue there. In my younger days I made ſeveral attempts to get in there; but as they were only with the view of procuring a refuge and reſt in my old age, and, like the exertions of an indolent perſon, only by fits and ſtarts, they were never attended with the ſmalleſt ſucceſs. When misfortunes came, they afforded me a pretext of giving myſelf up to my ruling paſſion." He often exaggerated his misfortunes to himſelf as well as to others. He endeavoured particularly to render intereſting by his deſcription his misfortunes and his poverty, although the former were far leſs than he imagined, and notwithſtanding he had certain reſources againſt the latter. In Rouſſeau other reſpects he was charitable, generous, ſober, juſt, contenting himſelf with what was purely neceſſary, and refuſing the means which might have procured him wealth and offices. He cannot, like many other ſophiſts, be accuſed of having often repeated with a ſtudied emphaſis the word *Virtue*, without inſpiring the ſentiment. When he is ſpeaking of the duties of mankind, of the principles neceſſary to our happineſs, of the duty we owe to ourſelves and to our equals, it is with a copiouſneſs, a charm, and an impetuoſity, that could only proceed from the heart. He ſaid one day to M. de Buffon, "You have aſſerted and proved before J. J. Rouſſeau that mothers ought to ſuckle their children." "Yes (ſays this great naturaliſt), we have all ſaid ſo; but M. Rouſſeau alone forbids it, and cauſes himſelf to be obeyed." Another academician ſaid, "that the virtues of Voltaire were without heart, and thoſe of Rouſſeau without head." He was acquainted at an early age with the works of the Greek and Roman authors; and the republican virtues there held forth to view, the rigorous auſterity of Cato, Brutus, &c. carried him beyond the limits of a ſimple eſtimation of them. Influenced by his imagination, he admired every thing in the ancients, and ſaw nothing in his contemporaries but enervated minds and degenerated bodies.

His ideas about politics were almoſt as eccentric as his paradoxes about religion. Some reckon his *Social Compact*, which Voltaire calls the *Unſocial Compact*, the greateſt effort his genius produced. Others find it full of contradictions, errors, and cynical paſſages, obſcure, ill-arranged, and by no means worthy of his ſhining pen. There are ſeveral other ſmall pieces wrote by him, to be found in a collection of his works publiſhed in 25 vols 8vo. and 12mo, to which there is appended a very inſignificant ſupplement in 6 vols.

The moſt uſeful and moſt important truths in this collection are picked out in his Thoughts; in which the confident ſophiſt and the impious author diſappear, and nothing is offered to the reader but the eloquent writer and the contemplative moraliſt. There were found in his port-folio his Confeſſions, in twelve books; the firſt ſix of which were publiſhed. "In the preface to theſe memoirs, which abound with characters well drawn, and written with warmth, with energy, and ſometimes with elegance, he declares (ſays M. Paliſſot), like a peeviſh miſanthrope, who boldly introduces himſelf on the ruins of the world, to declare to mankind, whom he ſuppoſes aſſembled upon theſe ruins, that in that innumerable multitude, none could dare to ſay, *I am better than that man*. This affectation of ſeeing himſelf alone in the univerſe, and of continually directing every thing to himſelf, may appear to ſome moroſe minds a fanaticiſm of pride, of which we have no examples, at leaſt ſince the time of Cardan." But this is not the only blame which may be attached to the author of the Confeſſions. With uneaſineſs we ſee him, under the pretext of ſincerity, diſhonouring the character of his benefactreſs Lady Warren. There are invectives no leſs offenſive againſt obſcure and celebrated characters, which ought entirely or partly to have been ſuppreſſed. A lively wit ſaid, that Rouſſeau would have been held in higher eſtimation for virtue, "had he died without his confeſſion. The ſame opinion is entertained by M. Bon-

ner.

Rouſſeau, Servant. bier, author of the Literary Hiſtory of Geneva: "His confeſſions (ſays he) appear to me to be a very dangerous book, and paint Rouſſeau in ſuch colours as we would never have ventured to apply to him. The excellent traits which we meet with of ſome ſentiments, and the delicate anatomy which he makes of ſome actions, are not ſufficient to counterbalance the deteſtable matter which is found in them, and the unceaſing obloquies everywhere to be met with." It is certain, that if Rouſſeau has given a faithful delineation of ſome perſons, he has viewed others through a cloud, which formed in his mind perpetual ſuſpicions. He imagined he thought juſtly and ſpoke truly; but the ſimpleſt thing in nature, ſays M. Servant, if diſtilled through his violent and ſuſpicious head, might become poiſon. Rouſſeau, in what he ſays of himſelf, makes ſuch acknowledgments as certainly prove that there were better men than he, at leaſt if we may judge him from the firſt ſix books of his memoirs, where nothing appears but his vices. They ought not perhaps to be ſeparated from the ſix laſt books, where he ſpeaks of the virtues which make reparation for them; or rather the work ought not to have been publiſhed at all, if it be true (which there can be little doubt of) that in his confeſſions he injured the public manners, both by the baſeneſs of the vices he diſcloſed, and by the manner in which he united them with the virtues. The other pieces which we find in this new edition of his works are, 1. *The Reveries of a Solitary Wanderer*, being a journal of the latter part of his life. In this he confeſſes, that he liked better to ſend his children into hoſpitals deſtined for orphans, than to take upon himſelf the charge of their maintenance and education; and endeavours to palliate this error, which nothing can exculpate. 2. *Conſiderations upon the Government of Poland.* 3. *The Adventures of Lord Edward*, a novel, being a kind of ſupplement to the new Heloiſa. 4. *Various Memoirs and Fugitive Pieces*, with a great number of letters, ſome of which are very long, and written with too much ſtudy, but containing ſome eloquent paſſages and ſome deep thought. 5. *Emilia and Sophia.* 6. *The Levite of Ephraim*, a poem in proſe, in 4 cantos; written in a truly ancient ſtyle of ſimplicity. 7. *Letters to Sara.* 8. *An Opera and a Comedy.* 9. *Tranſlations of the firſt book of Tacitus's Hiſtory, of the Epiſode of Olinda and Sophronia, taken from Taſſo*, &c. &c. Like all the other writings of Rouſſeau, we find in theſe poſthumous pieces many admirable and ſome uſeful things; but they alſo abound with contradictions, paradoxes, and ideas very unfavourable to religion. In his letters eſpecially we ſee a man chagrined at misfortunes, which he never attributes to himſelf, ſuſpicious of every body about him, calling and believing himſelf a lamb in the midſt of wolves; in one word, as like Paſcal in the ſtrength of his genius, as in his fancy of always ſeeing a precipice about him. This is the reflection of M. Servant, who knew him, aſſiſted him, and careſſed him during his ſtay at Grenoble in 1768. This magiſtrate having been very attentive in obſerving his character, ought the rather to be believed, as he inſpected it without either malice, envy, or reſentment, and only from the concern he had for this philoſopher, whom he loved and admired.

ROUT, in law, is applied to an aſſembly of perſons going forcibly to commit ſome unlawful act, whether they execute it or not. See RIOT.

Route, Rowe.

ROUTE, a public road, highway, or courſe, eſpecially that which military forces take. This word is alſo uſed for the defeat and flight of an army.

ROWE (Nicholas), deſcended of an ancient family in Devonſhire, was born in 1673. He acquired a complete taſte of the claſſic authors under the famous Dr Buſby in Weſtminſter ſchool; but poetry was his early and darling ſtudy. His father, who was a lawyer, and deſigned him for his own profeſſion, entered him a ſtudent in the Middle Temple. He made remarkable advances in the ſtudy of the law; but the love of the belles lettres, and of poetry in particular, ſtopt him in his career. His firſt tragedy, the Ambitious Stepmother, meeting with univerſal applauſe, he laid aſide all thoughts of riſing by the law. He afterwards compoſed ſeveral tragedies; but that which he valued himſelf moſt upon, was his Tamerlane. The others are, the *Fair Penitent*, *Ulyſſes*, the *Royal Convert*, *Jane Shore*, and *Lady Jane Grey*. He alſo wrote a poem called the *Biter*, and ſeveral poems upon different ſubjects, which have been publiſhed under the title of Miſcellaneous Works, in one volume, as his dramatic works have been in two. Rowe is chiefly to be conſidered (Dr Johnſon obſerves) in the light of a tragic writer and a tranſlator. In his attempt at comedy, he failed ſo ignominiouſly, that his Biter is not inſerted in his works; and his occaſional poems and ſhort compoſitions are rarely worthy of either praiſe or cenſure, for they ſeem the caſual ſports of a mind ſeeking rather to amuſe its leiſure than to exerciſe its powers. In the conſtruction of his dramas there is not much art; he is not a nice obſerver of the unities. He extends time, and varies place, as his convenience requires. To vary the place is not (in the opinion of the learned critic from whom theſe obſervations are borrowed) any violation of nature, if the change be made between the acts; for it is no leſs eaſy for the ſpectator to ſuppoſe himſelf at Athens in the ſecond act, than at Thebes in the firſt; but to change the ſcene, as is done by Rowe in the middle of an act, is to add more acts to the play, ſince an act is ſo much of the buſineſs as is tranſacted without interruption. Rowe, by this licence, eaſily extricates himſelf from difficulties; as in Lady Jane Gray, when we have been terrified with all the dreadful pomp of public execution, and are wondering how the heroine or the poet will proceed, no ſooner has Jane pronounced ſome prophetic rhimes, than—paſs and be gone—the ſcene cloſes, and Pembroke and Gardiner are turned out upon the ſtage. I know not (ſays Dr Johnſon) that there can be found in his plays any deep ſearch into nature, any accurate diſcriminations of kindred qualities, or nice diſplay of paſſion in its progreſs; all is general and undefined. Nor does he much intereſt or affect the auditor, except in Jane Shore, who is always ſeen and heard with pity. Alicia is a character of empty noiſe, with no reſemblance to real ſorrow or to natural madneſs. Whence then has Rowe his reputation? From the reaſonableneſs and propriety of ſome of his ſcenes, from the elegance of his diction, and the ſuavity of his verſe. He ſeldom moves either pity or terror, but he often elevates the ſentiment; he ſeldom pierces the breaſt, but he always delights the ear, and often improves the under-

Rowe. understanding. Being a great admirer of Shakeſpeare, he gave the public an edition of his plays; to which he prefixed an account of that great man's life. But the moſt conſiderable of Mr Rowe's performances was a tranſlation of Lucan's *Pharſalia*, which he juſt lived to finiſh, but not to publiſh; for it did not appear in print till 1728, ten years after his death.

Meanwhile, the love of poetry and books did not make him unfit for buſineſs; for nobody applied cloſer to it when occaſion required. The Duke of Queenſberry, when ſecretary of ſtate, made him ſecretary for public affairs. After the Duke's death, all avenues were ſtopped to his preferment; and during the reſt of Queen Anne's reign he paſſed his time with the Muſes and his books. A ſtory, indeed, is told of him, which ſhows that he had ſome acquaintance with her miniſters. It is ſaid, that he went one day to pay his court to the lord treaſurer Oxford, who aſked him, "If he underſtood Spaniſh well?" He anſwered, "No:" but thinking that his Lordſhip might intend to ſend him into Spain on ſome honourable commiſſion, he preſently added, "that he did not doubt but he could ſhortly be able both to underſtand and to ſpeak it." The earl approving what he ſaid, Rowe took his leave; and, retiring a few weeks to learn the language, waited again on the Earl to acquaint him with it. His Lordſhip aſking him. "If he was ſure he underſtood it thoroughly?" and Rowe affirming that he did, "How happy are you, Mr Rowe," ſaid the Earl, "that you can have the pleaſure of reading and underſtanding the Hiſtory of Don Quixote in the original!" On the acceſſion of George I. he was made poet laureat, and one of the land ſurveyors of the cuſtoms in the port of London. The prince of Wales conferred on him the clerkſhip of his council; and the Lord Chancellor Parker made him his ſecretary for the preſentations. He did not enjoy theſe promotions long; for he died Dec. 6. 1718, in his 45th year.

Mr Rowe was twice married, had a ſon by his firſt wife, and a daughter by his ſecond. He was a handſome, genteel man; and his mind was as amiable as his perſon. He lived beloved; and at his death had the honour to be lamented by Mr Pope, in an epitaph which is printed in Pope's works, although it was not affixed on Mr Rowe's monument in Weſtminſter-abbey, where he was interred in the poet's corner, oppoſite to Chaucer.

Rowe (Eliſabeth), an Engliſh lady, eminent for her excellent writings both in proſe and verſe, born at Ilcheſter in Somerſetſhire in 1647, was the daughter of worthy parents, Mr Walter Singer and Mrs Eliſabeth Portnel. She received the firſt ſerious impreſſions of religion as ſoon as ſhe was capable of it. There being a great affinity between painting and poetry, this lady, who had a vein for the one, naturally had a taſte for the other. She was alſo very fond of muſic; chiefly of the grave and ſolemn kind, as beſt ſuited to the grandeur of her ſentiments and the ſublimity of her devotion. But poetry was her favourite employment, her diſtinguiſhing excellence. So prevalent was her genius this way, that her proſe is all poetical. In 1696, a collection of her poems was publiſhed at the deſire of two friends. Her paraphraſe on the xxxviiith chapter of Job was written at the requeſt of biſhop Ken. She had no other tutor for the French and Italian languages than the honourable Mr Thynne, who willingly took the taſk upon himſelf. Her ſhining merit, with the charms of her perſon and converſation, had procured her a great many admirers. Among others, it is ſaid, the famous Mr Prior made his addreſſes to her. But Mr Thomas Rowe was to be the happy man. This gentleman was honourably deſcended: and his ſuperior genius, and inſatiable thirſt after knowledge, were conſpicuous in his earlieſt years. He had formed a deſign to compile the lives of all the illuſtrious perſons in antiquity omitted by Plutarch; which, indeed, he partly executed. Eight lives were publiſhed ſince his deceaſe. They were tranſlated into French by the abbé Bellenger in 1734. He ſpoke with eaſe and fluency; had a frank and benevolent temper, an inexhauſtible fund of wit, and a communicative diſpoſition. Such was the man who, charmed with the perſon, character, and writings, of our authoreſs, married her in 1710, and made it his ſtudy to repay the felicity with which ſhe crowned his life. Too intenſe an application to ſtudy, beyond what the delicacy of his frame would bear, broke his health, and threw him into a conſumption, which put a period to his valuable life in May 1715, when he was but juſt paſt the 28th year of his age. Mrs Rowe wrote a beautiful elegy on his death; and continued to the laſt moments of her life to expreſs the higheſt veneration and affection for his memory. As ſoon after his deceaſe as her affairs would permit, ſhe indulged her inclination for ſolitude, by retiring to Frome, in Somerſetſhire, in the neighbourhood of which place the greateſt part of her eſtate lay. In this receſs it was that ſhe compoſed the moſt celebrated of her works, Friendſhip in Death, and the Letters Moral and Entertaining. In 1736, ſhe publiſhed, the Hiſtory of Joſeph; a poem which ſhe had written in her younger years. She did not long ſurvive this publication; for ſhe died of an apoplexy, as was ſuppoſed, Feb. 20. 1736-7. In her cabinet were found letters to ſeveral of her friends, which ſhe had ordered to be delivered immediately after her deceaſe. The Rev. Dr Iſaac Watts, agreeably to her requeſt, reviſed and publiſhed her devotions in 1737, under the title of Devout Exerciſes of the Heart in Meditation and Soliloquy, Praiſe and Prayer; and, in 1739, her Miſcellaneous Works, in proſe and verſe, were publiſhed in 2 vols. 8vo, with an account of her life and writings prefixed.

As to her perſon, ſhe was not a regular beauty, yet poſſeſſed a large ſhare of the charms of her ſex. She was of a moderate ſtature, her hair of a fine colour, her eyes of a dariſh grey inclining to blue, and full of fire. Her complexion was very fair, and a natural bluſh glowed in her cheeks. She ſpoke gracefully; her voice was exceedingly ſweet and harmonious; and ſhe had a ſoftneſs in her aſpect which inſpired love, yet not without ſome mixture of that awe and veneration which diſtinguiſhed ſenſe and virtue, apparent in the countenance, are wont to create.

ROWEL, among farriers, a kind of iſſue anſwering to what in ſurgery is called a *ſeton*. See Farriery, ſect. v.

ROWLEY, a monk who is ſaid to have flouriſhed at Briſtol in the 15th century, and to have been an author voluminous and elegant. Of the poems attributed to him, and publiſhed ſome time ago, various

Rowe. Rowley.

Rowley, Roxburgh.

opinions have been entertained, which we have noticed elſewhere. They ſeem now to be almoſt forgotten. See CHATTERTON.

ROWLEY (William), who ſtands in the third claſs of dramatic writers, lived, in the reign of king Charles I. and received his education at the univerſity of Cambridge; but whether he took any degree there, is not evident; there being but few particulars preſerved in regard to him more than his cloſe intimacy and connection with all the principal wits and poetical geniuſes of that age, by whom he was well beloved, and with ſome of whom he joined in their writings. Wood ſtyles him "the ornament, for wit and ingenuity, of Pembroke-hall in Cambridge." In a a word, he was a very great benefactor to the Engliſh ſtage, having, excluſive of his aid lent to Middleton, Day, Heywood, Webſter, &c. left us five plays of his own compoſing, and one in which even the immortal Shakeſpeare afforded him ſome aſſiſtance.

ROXBURGH-SHIRE, or TEVIOTDALE, a county of Scotland, deriving its name from the town of Roxburgh, which is now deſtroyed, and the river Teviot, that runs through the ſhire into the Tweed, is divided into the three diſtricts of *Teviotdale*, *Liddiſdale*, and *Eſkdale*, or *Euſdale*, ſo called from their reſpective rivers, Teviot, Liddal, and Eſk. It is bounded on the eaſt and ſouth eaſt by Northumberland and Cumberland, on the ſouth and ſouth-weſt by Annandale, on the weſt by Tweeddale, on the north by the Merſe and Lauderdale; extending about 30 miles from eaſt to weſt, and about 15 in breadth from the border of England to the Blue Cairn in Lauder-moor. The ſhire exhibits a rough irregular appearance of hills, moſſes, and mountains interſperſed, however, with narrow valleys, and watered with delightful ſtreams. Though the face of the country is bare of woods, the valleys yield plenty of corn, and the hills abound with paſture for ſheep and black cattle. The principal mountains of this country are known by the name of *Cockraw*: from whence a range of very hige hills runs weſtward, dividing Scotland from England. On the confines of this ſhire are the debateable lands; the property of which was formerly diſputed by the Scots and Engliſh borderers, but adjudged to the Scots at the union of the crowns.—Roxburghſhire yields plenty of lime and freeſtone, which in former times was freely uſed by the inhabitants in building caſtles to defend them from the invaſions of their Engliſh neighbours. The moſt diſtinguiſhed families in this country are the Scots and Kers, who raiſed themſelves to wealth and honours by their bravery and ſucceſs in a ſort of predatory war with their enemies of South Britain. The ſhire is very populous; and the people are ſtout and valiant. They were formerly inured to military diſcipline and all the dangers of war, by living on dry marches contiguous to thoſe of England; being ſo numerous and alert, that this and the neighbouring ſhire of Berwick could in 24 hours produce 10,000 men on horſeback, well armed and accoutred. In the ſhire of Roxburgh we ſtill meet with a great number of old caſtles and ſeats belonging to private gentlemen, whoſe anceſtors ſignalized themſelves in this manner; and we find the remains of old encampments, and a Roman military way, vulgarly called the *cauſeway*, running from Haunum to the Tweed. The principal town, called *Roxburgh*, giving the title of *duke* to the chief of the Kers, was anciently a royal borough, containing divers pariſhes, large and flouriſhing, defended by a ſtrong citadel, which was often alternately reduced by the Engliſh and Scotch adventurers. It was in beſieging this caſtle that James II. of Scotland loſt his life by the burſting of a cannon. In conſequence of the almoſt continual wars between the two nations, this fortreſs was razed, the town ruined, and its royalty tranſlated to Jedburgh, which is now a royal borough, ſituated between the Tefy and Jed.

Roxent, Royal.

ROXENT-CAPE, or *Rock of Liſbon*, a mountain and remarkable promontory in Portugal, ſituated in the Atlantic ocean, at the north entrance of the Tagus, 22 miles north of Liſbon.

ROYAL, ſomething belonging to a king: thus we ſay, royal family, royal aſſent, royal exchange, &c.

Royal Family. The firſt and moſt conſiderable branch of the king's royal family, regarded by the laws of England, is the queen.

1. The queen of England is either queen *regent*, queen *conſort*, or queen *dowager*. The queen *regent*, *regnant*, or *ſovereign*, is ſhe who holds the crown in her own right; as the firſt (and perhaps the ſecond) queen Mary, queen Eliſabeth, and queen Anne; and ſuch a one has the ſame powers, prerogatives, rights, dignities, and duties, as if ſhe had been a king. This is expreſsly declared by ſtatute 1 Mar. I. ſt. 3. c. 1. But the queen *conſort* is the wife of the reigning king; and ſhe by virtue of her marriage is participant of divers prerogatives above other women.

And, firſt, ſhe is a public perſon exempt and diſtinct from the king; and not, like other married women, ſo cloſely connected as to have loſt all legal or ſeparate exiſtence ſo long as the marriage continues. For the queen is of ability to purchaſe lands and to convey them, to make leaſes, to grant copyholds, and do other acts of ownerſhip, without the concurrence of her lord; which no other married woman can do: a privilege as old as the Saxon era. She is alſo capable of taking a grant from the king, which no other wife is from her huſband; and in this particular ſhe agreees with the *auguſta* or *piiſſima regina conjux divi imperatoris* of the Roman laws; who, according to Juſtinian, was equally capable of making a grant to, and receiving one from, the emperor. The queen of England hath ſeparate courts and officers diſtinct from the king's, not only in matters of ceremony, but even of law; and her attorney and ſolicitor general are entitled to a place within the bar of his majeſty's courts, together with the king's counſel. She may likewiſe ſue and be ſued alone, without joining her huſband. She may alſo have a ſeparate property in goods as well as lands, and has a right to diſpoſe of them by will. In ſhort, ſhe is in all legal proceedings looked upon as a feme ſole, and not as a feme covert; as a ſingle, not as a married woman. For which the reaſon given by Sir Edward Coke is this: becauſe the wiſdom of the common law would not have the king (whoſe continual care and ſtudy is for the public, and *circa arduа regni*) to be troubled and diſquieted on account of his wife's domeſtic affairs; and therefore it veſts in the queen a power of tranſacting her own concerns, without the intervention of the king, as if ſhe was an unmarried woman.

The queen hath alſo many exemptions, and minute prerogatives. For inſtance: ſhe pays no toll; nor is

ſhe

Royal. she liable to any amercement in any court. But in general, unless where the law has expressly declared her exempted, she is upon the same footing with other subjects; being to all intents and purposes the king's subject, and not his equal: in like manner as in the imperial law, *Augustus legibus solutus non est.*

The queen hath also some pecuniary advantages, which form her a distinct revenue: as, in the first place, she is intitled to an ancient perquisite called *queen gold*, or *aurum reginæ*; which is a royal revenue belonging to every queen-consort during her marriage with the king, and due from every person who hath made a voluntary offering or fine to the king, amounting to 10 merks or upwards, for and in consideration of any privileges, grants, licences, pardons, or other matter of royal favour conferred upon him by the king: and it is due in the proportion to one-tenth part more, over and above the entire offering or fine made to the king, and becomes an actual debt of record to the queen's majesty by the mere recording of the fine. As, if 100 merks of silver be given to the king for liberty to take in mortmain, or to have a fair, market, park, chase, or free-warren; there the queen is entitled to 10 merks in silver, or (what was formerly an equivalent denomination) to one merk in gold, by the name of *queen-gold*, or *aurum reginæ*. But no such payment is due for any aids or subsidies granted to the king in parliament or convocation; or for fines imposed by courts on offenders against their will; nor for voluntary presents to the king, without any consideration moving from him to the subject; nor for any sale or contract whereby the present revenues or possessions of the crown are granted away or diminished.

The original revenue of the ancient queens, before and soon after the conquest, seems to have consisted in certain reservations or rents out of the demense lands of the crown, which were expressly appropriated to her majesty, distinct from the king. It is frequent in domesday book, after specifying the rent due to the crown, to add likewise the quantity of gold or other renders reserved to the queen. These were frequently appropriated to particular purposes; to buy wood for her majesty's use, to purchase oil for lamps, or to furnish her attire from head to foot, which was frequently very costly, as one single robe in the fifth year of Henry II. stood the city of London in upwards of 80 pounds: A practice somewhat similar to that of the eastern countries, where whole cities and provinces were specifically assigned to purchase particular parts of the queen's apparel. And for a farther addition to her income, this duty of queen-gold is supposed to have been originally granted; those matters of grace and favour, out of which it arose, being frequently obtained from the crown by the powerful intercession of the queen. There are traces of its payment, though obscure ones, in the book of domesday, and in the great pipe-roll of Henry I. In the reign of Henry II. the manner of collecting it appears to have been well understood; and it forms a distinct head in the ancient dialogue of the exchequer written in the time of that prince, and usually attributed to Gervase of Tilbury. From that time downwards, it was regularly claimed and enjoyed by all the queen-consorts of England till the death of Henry VIII.; though after the accession of the Tudor family, the collecting of it seems to have been much neglected: and there being no queen consort afterwards till the accession of James I. a period of near 60 years, its very nature and quantity then became a matter of doubt; and being referred by the king to the chief justices and chief baron, their report of it was so very unfavourable, that his consort queen Anne, though she claimed it, yet never thought proper to exact it. In 1635, 11 Car. I. a time fertile of expedients for raising money upon dormant precedents in our old records (of which ship-money was a fatal instance), the king, at the petition of his queen Henrietta Maria, issued out his writ for levying it; but afterwards purchased it of his consort at the price of 10,000 pounds; finding it, perhaps, too trifling and troublesome to levy. And when afterwards, at the Restoration, by the abolition of military tenures, and the fines that were consequent upon them, the little that legally remained of this revenue was reduced to almost nothing at all; in vain did Mr Prynne, by a treatise that does honour to his abilities as a painful and judicious antiquarian, endeavoured to excite queen Catherine to revive this antiquated claim. Royal.

Another ancient perquisite belonging to the queen consort, mentioned by all our old writers, and therefore only worthy notice, is this: that on the taking a whale on the coasts, which is a royal fish, it shall be divided between the king and queen; the head only being the king's property, and the tail of it the queen's. *De sturgione observetur, quod rex illum habebit integrum: de balena vero sufficit, si rex habeat caput, et regina caudam.* The reason of this whimsical division, as assigned by our ancient records, was, to furnish the queen's wardrobe with whale bone.

But farther: though the queen is in all respects a subject, yet, in point of the security of her life and person, she is put upon the same footing with the king. It is equally treason (by the statute 25 Edward III.) to imagine or compass the death of our lady the king's companion, as of the king himself; and to violate or defile the queen consort, amounts to the same high crime; as well in the person committing the fact, as in the queen herself if consenting. A law of Henry VIII. made it treason also for any woman who was not a virgin, to marry the king without informing him thereof: but this law was soon after repealed; it trespassing too strongly, as well on natural justice as female modesty. If however the queen be accused of any species of treason, she shall (whether consort dowager) be tried by the peers of parliament, as queen Ann Boleyn was in 28. Hen. VIII.

The husband of a queen regent, as prince George of Denmark was to queen Anne, is her subject; and may be guilty of high treason against her: but, in the instance of conjugal fidelity, he is not subjected to the same penal restrictions. For which the reason seems to be, that if a queen consort is unfaithful to the royal bed, this may debase or bastardize the heirs to the crown; but no such danger can be consequent on the infidelity of the husband to a queen regent.

2. A queen *dowager* is the widow of the king, and as such enjoys most of the privileges belonging to her as queen consort. But it is not high treason to conspire her death, or to violate her chastity; for the same reason as was before alleged, because the succession to the crown is not thereby endangered. Yet still, *pro*

Royal. *digni ti regis*, no man can marry a queen-dowager without ſpecial licence from the king, on pain of forfeiting his lands and goods. This Sir Edward Coke tells us, was enacted in parliament in 6 Henry VI. though the ſtatute be not in print. But ſhe, though an alien born, ſhall ſtill be entitled to dower after the king's demiſe, which no other alien is. A queen-dowager when married again to a ſubject, doth not loſe her regal dignity, as peereſſes-dowager do when they marry commoners. For Katharine, queen-dowager of Henry V. though ſhe married a private gentleman, Owen ap Meredith ap Theodore, commonly called *Owen Tudor*; yet, by the name of *Katharine queen of England*, maintained an action againſt the biſhop of Carliſle. And ſo the dowager of Navarre marrying with Edmond the brother of king Edward I. maintained an action of dower by the name of *queen of Navarre*. Royal.

3. The prince of Wales, or heir apparent to the crown, and alſo his royal conſort, and the princeſs royal, or eldeſt daughter of the king, are likewiſe peculiarly regarded by the laws. For, By ſtatute 25 Edw. III. to compaſs or conſpire the death of the former, or to violate the chaſtity of either of the latter, are as much high treaſon as to conſpire the death of the king, or violate the chaſtity of the queen. And this upon the ſame reaſon as was before given; becauſe the prince of Wales is next in ſucceſſion to the crown, and to violate his wife might taint the blood-royal with baſtardy; and the eldeſt daughter of the king is alſo alone inheritable to the crown on failure of iſſue male, and therefore more reſpected by the laws than any of her younger ſiſters; inſomuch that upon this, united with other (feodal) principles, while the military tenures were in force, the king might levy an aid for marrying his eldeſt daughter, and her only. The heir apparent to the crown is uſually made prince of Wales and earl of Cheſter, by ſpecial creation and inveſtiture; but being the king's eldeſt ſon, he is by inheritance duke of Cornwall, without any new creation.

4. The reſt of the royal family may be conſidered in two different lights, according to the different ſenſes in which the term *royal family* is uſed. The larger ſenſe includes all thoſe who are by any poſſibility inheritable to the crown. Such, before the revolution, were all the deſcendants of William the Conqueror; who had branched into an amazing extent by intermarriages with the ancient nobility. Since the revolution and act of ſettlement, it means the Proteſtant iſſue of the princeſs Sophia; now comparatively few in number, but which in proceſs of time may poſſibly be as largely diffuſed. The more confined ſenſe includes only thoſe who are in a certain degree of propinquity to the reigning prince, and to whom therefore the law pays an extraordinary regard and reſpect; but after that degree is paſt, they fall into the rank of ordinary ſubjects, and are ſeldom conſidered any farther, unleſs called to the ſucceſſion upon failure of the nearer lines. For though collateral conſanguinity is regarded indefinitely with reſpect to inheritance or ſucceſſion, yet it is and can only be regarded within ſome certain limits in any other reſpect, by the natural conſtitution of things and the dictates of poſitive law.

The younger ſons and daughters of the king, and other branches of the royal family, who are not in the immediate line of ſucceſſion, were therefore little farther regarded by the ancient law, than to give them a certain degree of precedence before all peers and public officers as well eccleſiaſtical as temporal. This is done by the ſtatute 31 Henry VIII. c. 10. which enacts that no perſon except the king's children ſhall preſume to fix or have place at the ſide of the cloth of eſtate in the parliament chamber; and that certain great officers therein named ſhall have precedence above all dukes, except only ſuch as ſhall happen to be the king's ſon, brother, uncle, nephew (which Sir Edward Coke explains to ſignify grandſon or *nepos*), or brother's or ſiſter's ſon. But under the deſcription of the king's *children*, his *grandſons* are held to be included, without having recourſe to Sir Edward Coke's interpretation of *nephew*; and therefore when his late majeſty king George II. created his grandſon Edward, the ſecond ſon of Frederick prince of Wales deceaſed, duke of York, and referred it to the houſe of lords to ſettle his place and precedence, they certified that he ought to have precedence next to the late duke of Cumberland, the then king's youngeſt ſon; and that he might have a ſeat on the left hand of the cloth of eſtate. But when, on the acceſſion of his preſent majeſty, theſe royal perſonages ceaſed to take place as the *children*, and ranked only as the *brother* and *uncle* of the king, they alſo left their ſeats on the ſide of the cloth of eſtate; ſo that when the duke of Glouceſter, his majeſty's ſecond brother, took his ſeat in the houſe of peers, he was placed on the upper end of the earls bench (on which the dukes uſually ſit) next to his royal highneſs the duke of York. And in 1717, upon a queſtion referred to all the judges by king George I. it was reſolved, by the opinion of ten againſt the other two, that the education and care of all the king's grandchildren, while minors, did belong of right to his majeſty as king of this realm, even during their father's life. But they all agreed, that the care and approbation of their marriages, when grown up, belonged to the king their grandfather. And the judges have more recently concurred in opinion, that this care and approbation extend alſo to the preſumptive heir of the crown; though to what other branches of the royal family the ſame did extend, they did not find preciſely determined. The moſt frequent inſtances of the crown's interpoſition go no farther than nephews and nieces; but examples are not wanting of its reaching to more diſtant collaterals. And the ſtatute 6 Henry VI. before-mentioned, which prohibits the marriage of a queen-dowager without the conſent of the king, aſſigns this reaſon for it: "becauſe the diſparagement of the queen ſhall give greater comfort and example to other ladies of eſtate, who are of the blood-royal, more lightly to diſparage themſelves." Therefore by the ſtatute 28 Hen. VIII. c. 18. (repealed, among other ſtatutes of treaſons, by 1 Edw. VI. c. 12) it was made high treaſon for any man to contract marriage with the king's children or reputed children, his ſiſters or aunts *ex parte paterna*, or the children of his brethren or ſiſters; being exactly the ſame degrees to which precedence is allowed by the ſtatute 31 Hen. VIII. before-mentioned. And now, by ſtatute 12 Geo. III. c. 11. no deſcendant of the body of king George II. (other than the iſſue of princeſſes married into foreign families) is capable of contracting

Royal || Rubens.

tracting matrimony, without the previous conſent of the king ſignified under the great ſeal; and any marriage contracted without ſuch a conſent is void. Provided, that ſuch of the ſaid deſcendants as are not above 25, may after a twelvemonth's notice given to the king's privy council, contract and ſolemnize marriage without the conſent of the crown; unleſs both houſes of parliament ſhall, before the expiration of the ſaid year, expreſsly declare their diſapprobation of ſuch intended marriage. And all perſons ſolemnizing, aſſiſting, or being preſent at any ſuch prohibited marriage, ſhall incur the penalties of the ſtatute of *præmunire*.

Royal Oak, a fair ſpreading tree at Boſcobel, in the pariſh of Donnington in Staffordſhire, the boughs whereof were once covered with ivy; in the thick of which king Charles II. ſat in the day-time with colonel Careleſs, and in the night lodged in Boſcobel houſe: ſo that they are miſtaken who ſpeak of it as an old hollow oak; it being then a gay flouriſhing tree, ſurrounded with many more. The poor remains thereof are now fenced in with a handſome wall, with this inſcription in gold letters: *Felicisſimam arborem quam in aſylum potentiſſimi regis Caroli II. Deus op. max. per quem reges regnant, hic creſcere voluit*, &c.

Royal Society. See Society.

ROYALTIES, the rights of the king, otherwiſe called the *king's prerogative*, and the *regalia*. See Prerogative and Regalia.

ROYENIA, in botany: A genus of the digynia order, belonging to the decandria claſs of plants; and in the natural method ranking under the 18th order, *Bicornes*. The calyx is urceolated; the corolla monopetalous, with the limb revoluted; the capſule is unilocular and quadrivalved.

ROYSTON, a town of Hertfordſhire in England, ſeated in E. Long. 0. 1. N. Lat. 52. 3. It is a large place, ſeated in a fertile vale full of inns, and the market is very conſiderable for corn. There was lately diſcovered, almoſt under the market-place, a ſubterraneous chapel of one Roſia, a Saxon Lady: it has ſeveral altars and images cut out of the chalky ſides, and is in form of a ſugar-loaf, having no entrance but at the top.

RUBBER (*India*). See Caoutchouc.

RUBENS (Sir Peter Paul), the moſt eminent of the Flemiſh painters, was born in 1577; but whether at Antwerp or Cologne it is not eaſy to determine. His father, who was a counſellor in the ſenate of Antwerp, had been forced by the civil wars to ſeek refuge in Cologne, and during his reſidence there Rubens is commonly ſaid to have been born.

The genius of Rubens, which began to unfold itſelf in his earlieſt years, was cultivated with peculiar care, and embelliſhed with every branch of claſſical and polite literature.

He ſoon diſcovered a ſtrong inclination for deſigning; and uſed to amuſe himſelf with that employment in his leiſure hours, while the reſt of his time was devoted to other ſtudies. His mother, perceiving the bias of her ſon, permitted him to attend the inſtructions of Tobias Verhaecht a painter of architecture and landſcape. He next became the pupil of Adam Van Oort, but he ſoon found that the abilities of this maſter were inſufficient to anſwer his elevated ideas. His ſurly temper too was diſguſtful to Rubens, whoſe natural diſpoſition was modeſt and amiable. Rubens.

Anxious to find an artiſt whoſe genius and diſpoſitions were congenial with his own, he became the diſciple of Octavio Van Veen, generally known by the name of Otho Venius, a painter of ſingular merit, and who was not only ſkilled in the principles of his art, but alſo diſtinguiſhed for learning and other accompliſhments. Between the maſter and ſcholar a remarkable ſimilarity appeared in temper and inclination; indeed, in the whole turn of their minds. It was this congeniality of ſentiments which animated Rubens with that ardent paſſion for the art of painting which at length determined him to purſue it is a profeſſion. From this time he gave up his whole mind to it; and ſo ſucceſsful were his exertions, that he ſoon equalled his maſter.

In order to arrive at that perfection which he already beheld in idea, it became requiſite to ſtudy the productions of the moſt eminent artiſts. For this purpoſe he travelled through Italy, viſiting the moſt valuable collections of paintings and antique ſtatues with which that country abounds.

Sandrart, who was intimately acquainted with Rubens, informs us, that he was recommended in the moſt honourable manner to the duke of Mantua by the archduke Albert, who had witneſſed his talents in the finiſhing of ſome fine paintings deſigned for his own palace. At Mantua he was received by the duke with the moſt flattering marks of diſtinction, and had opportunities of improving himſelf which he did not neglect. Here he carefully ſtudied the works of Julio Romano. He next viſited Rome, where he had an opportunity of examining the productions of Raphael. The paintings of Titian and Paolo Veroneſe called him to Venice, where he accompliſhed himſelf in the art of colouring.

He continued in Italy ſeven years. At length receiving intelligence that his mother was taken ill, he haſtened to Antwerp: but his filial affection was not gratified with a ſight of her; ſhe died before his arrival. He married ſoon after; but his wife dying at the end of four years, he retired from Antwerp for ſome time, and endeavoured to ſoothe his melancholy by a journey to Holland. At Utrecht he viſited Hurtort, for whom he had a great value.

The fame of Rubens was now ſpread over Europe. He was invited by Mary of Medicis queen of Henry IV. of France to Paris, where he painted the galleries in the palace of Luxemburg. Theſe form a ſeries of paintings which delineate the hiſtory of Mary; and afford a convincing proof how well qualified he was to excel in allegorical and emblematical compoſitions. While at Paris he became acquainted with the duke of Buckingham, who was ſo taken with his great talents and accompliſhments, that he judged him well qualified to explain to Iſabella, the wife of Albert the archduke, the cauſe of the miſunderſtanding which had taken place between the courts of England and Spain. In this employment Rubens acquitted himſelf with ſuch propriety, that Iſabella appointed him envoy to the king of Spain, with a commiſſion to propoſe terms of peace, and to bring back the inſtructions of that monarch. Philip was no leſs captivated with Rubens: He conferred on him the honour of knighthood, and made him ſecretary to his privy council. Rubens returned

Rubens. returned to Bruſſels, and thence paſſed over into England in 1630 with a commiſſion from the Catholic king to negociate a piece between the two crowns. He was ſucceſsful in his negociation, and a treaty was concluded. Charles I. who then filled the Britiſh throne, could not receive Rubens in a public character on account of his profeſſion; nevertheleſs, he treated him with every mark of reſpect. Having engaged him to paint ſome of the apartments of Whitehall, he not only gave him a handſome ſum of money, but, as an acknowledgement of his merit created him a knight; and the duke of Buckingham, his friend and patron, purchaſed of him a collection of pictures, ſtatues, medals, and antiques, with the ſum of L. 10,000.

He returned to Spain, where he was magnificently honoured and rewarded for his ſervices. He was created a gentleman of the king's bedchamber, and named ſecretary to the council of ſtate in the Netherlands. Rubens, however, did not lay aſide his profeſſion. He returned to Antwerp, where he married a ſecond wife called *Helena Forment*, who, being an eminent beauty, helped him much in the figures of his women. He died on 30th May 1640, in the 63d year of his age; leaving vaſt riches to his children. Albert his eldeſt ſon ſucceeded him in the office of ſecretary of ſtate in Flanders.

As Rubens was poſſeſſed of all the ornaments and advantages that render a man worthy to be eſteemed or courted, he was always treated as a perſon of conſequence. His figure was noble, his manners engaging, and his converſation lively; his learning was univerſal. Though his favourite ſtudy muſt have occupied him much, yet he found time to read the works of the moſt celebrated authors, and eſpecially the poets. He ſpoke ſeveral languages perfectly, and was an excellent ſtatesman.

His houſe at Antwerp was enriched with every thing in the arts that was rare and valuable. It contained one ſpacious apartment, in imitation of the rotunda at Rome, adorned with a choice collection of pictures which he had purchaſed in Italy; part of which he ſold to the duke of Buckingham.

His genius qualified him to excel equally in every thing that can enter into the compoſition of a picture. His invention was ſo fertile, that, if he had occaſion to paint the ſame ſubject ſeveral times, his imagination always ſupplied him with ſomething ſtriking and new. The attitudes of his figures are natural and varied, the carriage of the head is peculiarly graceful, and his expreſſion noble and animated.

He is by all allowed to have carried the art of colouring to its higheſt pitch; he underſtood ſo thoroughly the true principles of the chiaro-ſcuro, that he gave to his figures the utmoſt harmony, and a prominence reſembling real life. His pencil is mellowed, his ſtrokes bold and eaſy, his carnation glows with life, and his drapery is ſimple, but grand, broad, and hung with much ſkill.

The great excellence of Rubens appears in his grand compoſitions; for as they are to be viewed at a diſtance, he laid on a proper body of colours with uncommon boldneſs, and fixed all his tints in their proper places; ſo that he never impaired their luſtre by breaking or torturing them; but touched them in ſuch a manner as to give them a laſting force, beauty, and harmony.

It is generally allowed, that Rubens wanted correctneſs in drawing and deſigning; ſome of his figures being heavy and too ſhort, and the limbs in ſome parts not being juſtly ſketched in the outline. Though he had ſpent ſeven years in Italy in ſtudying thoſe antiques by which other celebrated artiſts had modelled their taſte; though he had examined them with ſuch minute attention as not only to perceive their beauties, but to be qualified to deſcribe them in a Diſſertation which he wrote on that ſubject: yet he ſeems never to have diveſted himſelf of that heavy ſtyle of painting, which, being peculiar to his native country, he had inſenſibly acquired. The aſtoniſhing rapidity too with which he painted, made him fall into inaccuracies, from which thoſe works that he finiſhed with care are entirely exempted. Rubens, Rubia.

Among his finiſhed pieces may be mentioned the Crucifixion of Jeſus Chriſt betweeen the two Thieves, which was very lately to be ſeen at Antwerp; but of all his works the paintings in the palace of Luxemburg beſt diſplay his genius and his ſtyle.

It is the obſervation of Algarotti, that he was more moderate in his movements than Tintoretto, and more ſoft in his chiaro-ſcuro than Carravaggio; but not ſo rich in his compoſitions, nor ſo light in his touches, as Paolo Veroneſe; in his carnations leſs true than Titian, and leſs delicate than Vandyck. Yet he contrived to give his colours the utmoſt tranſparency and harmony, notwithſtanding the extraordinary deepneſs of them; and he had a ſtrength and grandeur of ſtyle entirely his own.

RUBIA, MADDER: A genus of the monogynia order, belonging to the tetrandria claſs of plants; and in the natural method ranking under the 47th order, *Stellatæ*. The corolla is monopetalous and campanulated; and there are two monoſpermous berries. There are three ſpecies, of which the moſt remarkable is the tinctorum, or dyer's madder, ſo much uſed by the dyer's and callico-printers. This hath a perennial root and annual ſtalk: the root is compoſed of many long, thick, ſucculent fibres, almoſt as large as a man's little finger; theſe are joined at the top in a head like aſparagus, and run very deep into the ground. From the upper part, or head of the root, come out many ſide-roots, which extend juſt under the ſurface of the ground to a great diſtance, whereby it propagates very faſt; for theſe ſend up a great number of ſhoots, which, if carefully taken off in the ſpring ſoon after they are above ground become ſo many plants. Theſe roots are of a reddiſh colour, ſomewhat tranſparent; and have a yellowiſh pith in the middle, which is tough and of a bitteriſh taſte. From this root ariſe many large four-cornered jointed ſtalks, which, in good land, will grow five or ſix feet long, and if ſupported, ſometimes ſeven or eight: they are armed with ſhort herbaceous prickles; and at each joint are placed five or ſix ſpear-ſhaped leaves: their upper ſurfaces are ſmooth: but their mid-rib on the under ſide is armed with rough herbaceous ſpines, and the leaves ſit cloſe to the branches in whorls. From the joints of the ſtalk come out the branches, which ſuſtain the flowers: they are placed by pairs oppoſite; each pair croſſing the other: theſe have a few ſmall leaves toward the bottom, which are by threes, and upwards by pairs oppoſite: the branches are terminated by looſe branching ſpikes of yellow flowers, which are cut into four parts reſembling ſtars. Theſe appear in June, and are ſometimes ſucceeded by ſeeds, which

Rubininſka Rubus.

which ſeldom ripen in England. For the manner of its cultivation and preparation for the uſe of dyers, ſee the article MADDER.

Madder-root is uſed in medicine. The virtues attributed to it are thoſe of a detergent and aperient; whence it has been uſually ranked among the opening roots, and recommended in obſtructions of the viſcera, particularly of the kidneys, in coagulations of the blood from falls or bruiſes, in the jaundice, and beginning dropſies. It is an ingredient in the icteric decoction of the Edinburgh pharmacopœia.

It is obſervable, that this root, taken internally, tinges the urine of a deep red colour; and in the Philoſophical Tranſactions we have an account of its producing a like effect upon the bones of animals who had it mixed with their food: all the bones, particularly the more ſolid ones, were ſaid to be changed, both externally and internally, to a deep red; but neither the fleſhy nor the cartilaginous parts ſuffered any alterations: ſome of theſe bones macerated in water for many weeks together, and afterwards ſteeped and boiled in ſpirit of wine, loſt none of their colour, nor communicated any tinge to the liquors. This root, therefore, was concluded to be poſſeſſed of great ſubtilty of parts, and its medical virtues hence to deſerve inquiry. The ſame trials, however, made by others, have not been found to produce the ſame effects as thoſe abovementioned.—Of late the root has come into great reputation as an emmenagogue.

RUBININSKA, one of the northern provinces of Ruſſia, bounded by the province of Dwina on the north, by Syrianes on the eaſt, by Belozera on the ſouth, and by the lake Onega on the weſt.

RUBRIC, in the canon law, ſignifies a title or article in certain ancient law-books; thus called becauſe written, as the titles of the chapters in our ancient bibles are, in red letters.

RUBUS, the BRAMBLE, or *Raſpberry buſh*: A genus of the polygamia order, belonging to the icoſandria claſs of plants; and in the natural order ranking under the 35th order, *Senticoſæ*. The calyx is quinquefid, the petals five; the berry conſiſting of monoſpermous acini or pulpy grains. The principal ſpecies is the common raſpberry, which, with its varieties, demands culture in every garden for their fruit; particularly the common red kind, white ſort, and twice-bearing raſpberry; all of which are great bearers: but for the general plantations, we chooſe principally the common red and the white kind, as being generally the greateſt bearers of all; planting alſo a ſhare of the twice-bearing ſort, both as a curioſity and for the ſake of its autumnal crops of fruit, which in favourable ſeaſons ripen in tolerable perfection; obſerving to allow all the ſorts ſome open expoſure in the kitchen garden, though they will proſper in almoſt any ſituation.

The other ſpecies are conſidered as plants of variety, for hardy plantations in the ſhrubbery. Some of them are alſo very ornamental flowering plants; particularly the Virginian flowering raſpberry, and the double-bloſſomed bramble, which have great merit as furniture for ornamental compartments; and the white-berried bramble, which is a great curioſity. All the other ſpecies and varieties ſerve to diverſify large collections.

RUBY, a genus of precious ſtones of various colours; as, 1. Of a deep red colour inclining a little to purple; the *carbuncle* of Pliny. 2. The ſpinell, of the colour of a bright corn poppy flower. 3. The balaſs or pale red inclining to violet; ſuppoſed to be the mother of rubies. 4. The rubicell, of a reddiſh yellow. According to Cronſtedt, the ruby chryſtalliſes into an octoedral form, as well as the diamond, from which it differs very little in hardneſs and weight, whence he concludes that they are both of the ſame nature; but ſome late experiments have ſhown that the diamond differs exceſſively from all other gems, in being diſſipable by a ſtrong fire, which the others reſiſt. Tavernier and Dutens inform us, that in the Eaſt Indies all coloured gems are named *rubies*, without regard to what their colours may be; and that the particular colour is added to the name of each in order to diſtinguiſh them from one another. There are, however, ſome ſoft ſtones of this kind which they call *bacan*; and it is certain, that the hard and brilliant rubies named *oriental*, as well as the ſaphires and topazes, are all the ſame, excepting only the circumſtance of colour. Some are partly red and partly blue, yellow, and ſome quite colourleſs. The ſpinell rubies are about half the value of diamonds of the ſame weight; the balaſs is valued at 30 ſhillings per carat. Tavernier mentions 108 rubies in the throne of the great Mogul, from 100 to 200 carats, and of a round one almoſt 2¼ ounces: there is alſo mention made by other travellers of rubies exceeding 200 carats in weight. According to Dutens a perfect ruby, if it weighs more than 3½ carats, is of greater value than a diamond of the ſame weight. If it weighs one carat, it is worth 10 guineas; if two carats, 40 guineas; three carats, 150 guineas; if ſix carats, upwards of 1000 guines.

Ruby.

According to the experiments of Bergman and Achard, the texture of the ruby is foliated like that of diamonds; it is fuſible with borax in a ſtrong and long continued heat, running into a tranſparent glaſs of a pale green colour: the ſame effect is produced by microcoſmic ſalt; but with ſedative ſalt, or mineral or vegetable alkali, the glaſs is opaque and differently coloured. From the experiments of M. d'Arcet, it appears that the ruby does not loſe its colour in the greateſt fire; but Henckel ſays, that, by means of a burning glaſs, he ſoftened it in ſuch a manner as to receive the impreſſion of a ſeal of jaſper. It becomes electric by being rubbed. Its ſpecific gravity, according to Bergman, is from 3,180 to 4,240; but Briſſon tells us that it is 4,283. The ſpecific gravity of the ſpinell is 3,760, of the Braſilian ruby 3,531.

Rubies are met with in the Cāpelan mountains of Pegu in the Eaſt Indies; and at Caos, Ava, Bilnagar, Calicut, Cananor, Ceilan, and Braſil. They are found in the ſands of rivers of a red colour, in an argillaceous earth of an hard texture and greeniſh colour: ſometimes they adhere to red rocks. The ſpinell rubies are met with in Hungary, Sileſia, Bohemia, and Braſil. The balaſs comes principally from Braſil, though ſome are alſo brought from the Eaſt Indies. The rubicell comes alſo from Braſil, but are ſaid to loſe their colour in the fire. A variety of this gem, but of a ſoft quality, is found in great plenty on the ſea-ſhore near Ely in Fifeſhire, Scotland. There is alſo a ſtone which

Ruby || Rudder.

which comes near to the ruby found near Portſoy, Banffſhire, and at Inverary, Argyleſhire, Scotland. The *rubino di rocca* of the Italians is a true garnet of a deep red and violet, or of the amethyſt colour. What is called ruby of arſenic or of ſulphur is the realgar: the ruby of zinc is the red blend; and the ruby of ſilver is the red ſilver ore.

Rubies may be artificially made from Braſilian topazes of a ſmoky appearance, by giving them a gradual heat in a crucible filled with aſhes, until it be red-hot.

Rock Ruby, the *amethyſtizontas* of the ancients, is found in Syria, Calcutta, Cananor, Cambaya, and Ethiopia. It is the moſt valued of all the ſpecies of garnets, and is frequently ſold as a ruby under the name of *rubinus Ruſſicum*. See Garnet and Ruby.

RUCTATION, a ventoſity ariſing from indigeſtion, and diſcharging itſelf at the mouth with a very diſagreeable noiſe.

RUDBECK (Olaus), a learned Swediſh phyſician, born of an ancient and noble family in 1630. He became profeſſor of medicine at Upſal, where he acquired great applauſe by his extenſive knowledge; and died in 1702. His principal works are, 1. *Exercitatio anatomica, exhibens ductus novos hepatico aqueoſos, & vaſa glandularum ſeroſa*, in 4to. He there aſſerts his claim to the diſcovery of the lymphatic veſſels, againſt the pretenſions of Thomas Bartholin. 2. *Athlantica, ſive Manheim, vera Japheti poſterorum ſedes ac patria*, 4 vols folio, is full of ſtrange paradoxes ſupported with profound learning: he there endeavours to prove, that Sweden was the country whence all the ancient Pagan divinities and our firſt parents were derived; and that the Germans, Engliſh, French, Danes, Greeks, and Romans, with all other nations, originally came from thence.

RUDBECKIA, in botany: a genus of the polygamia fruſtanea order, belonging to the ſyngeneſia claſs of plants; and in the natural method ranking under the 49th order, *Compoſitæ*. The receptacle is paleaceous and conical; the pappus conſiſts of a quadridentate margin; the calyx of a double ſeries of ſcaly leaves.

RUDDER, in navigation, a piece of timber turning on hinges in the ſtern of the ſhip, and which, oppoſing ſometimes one ſide in the water and ſometimes another, turns or directs the veſſel this way or that. See Helm.

In the ſeventh volume of the Tranſactions of the Society inſtituted at London for the Encouragement of Arts, Manufactures, and Commerce, there is explained a method of ſupplying the loſs of a ſhip's rudder at ſea. The invention, which is Captain Pakenham's of the royal navy, has been approved by Admiral Cornwallis, the commiſſioners of the admiralty, by the ſociety in whoſe tranſactions the account of it was firſt publiſhed, and who preſented to Captain Pakenham their gold medal, by the Trinity-houſe, by the managing owners of Eaſt India ſhipping, by the duke of Sudermania the preſent regent of Sweden, and by the ſociety for the improvement of naval architecture. The ſubſtitute here recommended for a loſt rudder, ſays the inventor, is formed of thoſe materials without which no ſhip goes to ſea, and its conſtruction is ſimple and ſpeedy. Captain Pakenham, however, did not give a particular account of his invention to the ſociety whom he addreſſed, and to whom he ſent a model of his invention, till ſuch time as he had an opportunity of reducing the theory he had conceived to practice. On the 7th of July 1788, he made this trial with the Merlin of Newfoundland; and he declares that, during the different manœuvres of tacking and wearing, he could not diſcover the leaſt variation between the operation of the machine and that of the ſhip's rudder: ſhe was ſteered with the ſame eaſe by one man, and anſwered the helm, in every ſituation fully as quick. Admiral Cornwallis certifies the ſame with reſpect to the Crown of 64 guns, which loſt her rudder on the Kentiſh Knock, when with the ſubſtitute ſhe was ſteered to Portſmouth with the utmoſt eaſe in a heavy gale, and, as the admiral aſſerts, it would have taken her to the Eaſt Indies. Rudder.

The materials and conſtruction are thus deſcribed in the Tranſactions. "N° 1. a top-maſt inverted; the fid-hole to ſhip the tiller in, and ſecured with hoops from the anchor ſtocks; the heel forming the head of the rudder. N° 2. The inner half of a jibb-boom. N° 3. The outer half of a jibb-boom. N° 4. A fiſh: the whole of theſe materials well-bolted together:—in a merchantman her ruff-tree. N° 5. A cap, with the ſquare part cut out to fit the ſtern-poſt, and acting as a lower gudgeon, ſecured to the ſtern-poſt with hawſers, leading from the bolts of the cap, under the ſhip's bottom, into the hawſe-holes, and hove well tort. N° 6. A plank, or, if none on board the ſhips, gangboards. N° 7. Anchor-ſtocks, made to fit the topmaſt as partners, ſecured to the deck, and ſupplying the place of the upper gudgeon, and in a merchant-ſhip the clamps of her windlaſs. N° 8. A ſtern-poſt. N° 9. Hoops from the anchor ſtocks. N° 10. Pigs of ballaſt, to ſink the lower part. The head of the rudder to paſs through as many decks as you wiſh." Plate CCCCXLII

On this the Captain makes the following remarks: "It might probably be ſuppoſed, that a difficulty would occur in bringing the jaws of the cap to embrace the ſtern-poſt; but this will at once be obviated, when it is remembered that the top-chains, or hawſers, leading from each end of the jaws, under the ſhip's bottom, are in fact a continuance of the jaws themſelves. Nor can it be apprehended that the cap, when fixed, may be impelled from its ſtation, either by the efforts of the ſea, or the courſe of the ſhip through the water, tho' even the hawſers, which confine it in the firſt inſtance, ſhould be relaxed:—the experiment proves, that the partners muſt be firſt torn away, or the main-piece broken off.

"Since the improved ſtate of navigation, notwithſtanding remedies have been found in general for the moſt diſaſtrous accidents at ſea, experience has evinced that nothing complete, had been hitherto invented to ſupply the loſs of a rudder. The firſt expedient within my knowledge were cables veered aſtern, with tackles leading from them to the ſhip's quarters. This practice was ſuperſeded by the invention of the machine uſually called *the Ipſwich machine*; but the conſtruction of it is complex and unwieldy, and veſſels are ſeldom found in poſſeſſion of the materials which form it. Commodore Byron, in the Journal of his Voyage round the World, ſays, that the Tamer, with every aſſiſtance from his own ſhip, was five days in conſtructing it. Beſides, like the before-

Ruddiman. beforementioned ſcheme, it can only operate to ſteer a ſhip large (and that but very wildly), and of courſe, under the circumſtance of a lee-ſhore, defeat the moſt ſkilful exertions of a ſeaman. Several other expedients have been adopted, which I ſhall not mention here, as the ſame defects equally appear in all.

"Thus it was apparent, that ample room was left for the diſcovery of ſome more certain reſource than any of the former; and the ſcheme which has ſuggeſted itſelf to me, will, I truſt, be found fully to anſwer the purpoſe intended. The materials are ſuch as ſcarcely any ſhip can venture to ſea without; and the conſtruction ſo ſpeedy, eaſy, and ſimple, that the capacity of the meaneſt ſailor will at once conceive it. I need not, from mathematical principles, ſhow the certainty of its effect, as it is formed and managed in the ſame manner as a ſhip's common rudder: and as the common rudder is certainly of all inventions the beſt calculated for guiding a veſſel through the water, it will of courſe follow, that whatever ſubſtitute the neareſt reſembles that, muſt be beſt adapted to ſupply its loſs."

RUDDIMAN (Thomas), one of the moſt eminent grammarians which Scotland had produced, was born in October 1674 at Raggel, in the pariſh of Boyndie and county of Banff. His father James Ruddiman was a farmer, and ſtrongly attached to the houſe of Stuart.

Mr Ruddiman was inſtructed in the principles of Latin grammar at the pariſh ſchool of Boyndie, where his application was ſo vigorous, and his progreſs ſo rapid, that he quickly ſurpaſſed all his claſs-fellows. His maſter, George Morſon, who was a ſkilful and attentive teacher, being unwilling to check his ardour for learning, permitted him to follow the impulſe of his genius, and to advance without waiting the ſlow progreſs of the other boys.

The pleaſure which the youthful mind receives from vivid deſcription, though wild and romantic, approaches to ecſtacy, and often makes an impreſſion which remains indelible. While at ſchool, the firſt book which charmed the opening mind of Ruddiman was Ovid's Metamorphoſes; nor did he ceaſe to reliſh the beauties of this author when his judgment was mature, for during the reſt of his life Ovid was his favourite poet.

At the age of ſixteen he became anxious to purſue his ſtudies at the univerſity; but his father thinking him too young, oppoſed his inclination. Hearing of the competition trial, which was annually held at King's college, Aberdeen, for a certain number of burſaries on the foundation of that univerſity, Ruddiman's ambition was kindled. Without the knowledge of his father, and with only a ſingle guinea in his pocket, which his ſiſter had privately given him, he ſet out for that place. On the road he was met by a company of gypſeys, who robbed him of his coat, his ſhoes, his ſtockings, and his guinea. This misfortune did not damp his enterpriſing ſpirit: He continued his journey to Aberdeen, preſented himſelf before the profeſſors as a candidate; and though he had neither clothes to give him a decent appearance nor friends to recommend him, he gained the firſt prize.

After attending the univerſity four years, he obtained the degree of maſter of arts; an honour of which he was always proud. The theſis ſays, the diſputation on this occaſion laſted *ab aurora uſque ad veſperum*, i. e. "from morning till night." Tho' Ruddiman was only twenty years of age when he left the univerſity, it appears from a book intitled *Rhetoricorum Libri tres*, compoſed before this period, but never publiſhed, that he had then read the Roman claſſics with uncommon attention and advantage. Ruddiman.

He was ſoon after engaged as a tutor to the ſon of Robert Young, Eſq; of Auldbar, the great grandſon of Sir Peter Young, who under the direction of Buchanan had been preceptor of James VI. His income here muſt have been very ſmall, or his ſituation unpleaſant; for within a year he accepted the office of ſchoolmaſter in the pariſh of Laurence-kirk. The profeſſion of ſchoolmaſter in a country-pariſh at that period could open no field for ambition, nor proſpect of great emolument; for by an act of parliament paſſed in 1633, the ſalary appropriated to this office could not be increaſed above 200 merks Scots, or L. 11 : 2 : 2⅔ Sterling. In diſcharging the duties of this humble but important ſtation, it is probable that he uſed Simſon's *Rudimenta Grammatica*, which was then originally taught in the northern ſchools, and by which he himſelf had been inſtructed in the principles of Latin grammar.

When Ruddiman had ſpent three years and a half in this employment, the celebrated Dr Pitcairne happening to paſs through Laurence-kirk, was detained in that village by a violent ſtorm. Pitcairne wanting amuſement, inquired at the hoſteſs if ſhe could procure any agreeable companion to bear him company at dinner. She replied, that the ſchoolmaſter, though young, was ſaid to be learned, and, though modeſt, ſhe was ſure could talk. Pitcairne was delighted with the converſation and learning of his new companion, invited him to Edinburgh, and promiſed him his patronage.

When Ruddiman arrived in Edinburgh, the advocates library which had been founded eighteen years before by Sir George Makenzie, attracted his curioſity and attention, and he was ſoon after appointed aſſiſtant-keeper under Mr Spottiſwoode the principal librarian. His ſalary for executing this laborious office was L. 8 : 6 : 8. He had beſides a ſmall honorary preſent from thoſe who were admitted advocates for correcting their theſes: he was alſo paid for copying manuſcripts for the uſe of the library. And the faculty, before he had held the office two years, were ſo highly pleaſed with his conduct, that they made him a preſent of 50 pounds Scots, or L. 4 : 3 : 4 Sterling.

During the ſitting of the court of ſeſſion he attended the library from ten till three. But this confinement did not prevent him from engaging in other laborious duties: A part of his time was occupied in teaching young gentlemen the Latin language. Some he attended at their lodgings, ſome waited upon him, and ſome reſided in his own houſe. An exact liſt of the names of thoſe who attended him, expreſſing the date of their entry, and the ſums which he was to receive from each, has been found in his pocket-book; a curious relick, which is ſtill preſerved.

When Ruddiman's merit as a ſcholar became better known, his aſſiſtance was anxiouſly ſolicited by thoſe who were engaged in literary publications. Freebairne, a reſpectable bookſeller of that period, prevailed upon him to correct and prepare for the preſs Sir Robert Sibbald's *Introductio ad hiſtoriam rerum a Romanis gestarum in ea Borealis Britanniæ parte quæ extra murum Pictum*

Ruddiman. *Publications.* He received for his labour L. 3 Sterling. At the request of Mr Spottiswoode librarian, for L. 3 Sterling he contributed his aid to the publication of Sir Robert Spottiswoode's Practiques of the Laws of Scotland.

In 1707 he commenced auctioneer, an employment not very suitable to the dignified character of a man of letters: but to this occupation he was probably impelled by necessity; for upon balancing his accounts at the end of the preceding year, the whole surplus was L. 28. 2s. with prospects of L. 236: 7: 6 Scots. Ruddiman had a family; and seems to have been a stranger to that foolish pride which has seduced some literary men into the opinion, that it is more honourable to starve than have recourse to an occupation which men of rank and opulence are accustomed to despise. The same year he published an edition of *Voluseni de Animi Tranquilitate Dialogus*, to which he prefixed the life of Volusenus. Volusenus or Wilson was a learned Scotsman, and had the honour to be patronized by Cardinal Wolsey (see WILSON). In 1709 he published *Johannis Cantici Salomonis Paraphrasis Poetica*, and *Johannis Cantica* with notes, which he dedicated in verse to his friend and patron Dr Pitcairne. The edition consisted of 200 copies. The expence of printing amounted to L. 5. 10 s. Sterling, and he sold them at a shilling each copy.

The philological talents of Ruddiman were next directed to a more important object, in which they became more conspicuous and useful. Freebairne the bookseller proposed to publish a new edition of the Scottish translation of Virgil's Æneid by Gawin Douglas bishop of Dunkeld. Of the contributions which some eminent characters of the age presented, the most valuable were supplied by Ruddiman. Freebairne acknowledged in general terms this obligation, but has not done him the justice to inform the reader what these valuable contributions were, and Ruddiman's modesty restrained him from publickly asserting his claim. From the pocket-book which has been already mentioned, it appears that Ruddiman corrected the work and wrote the glossary; and there is strong reason to believe that he was the author of the 42 general rules for assisting the reader to understand the language of Douglas. To those who wish to be acquainted with the ancient language of this island, the glossary, will be a treasure, as it forms a compendious dictionary of the Anglo-Saxon. For this elaborate work Ruddiman was allowed L. 8: 6: 8 Sterling.

The reputation of Ruddiman had now extended to a distance. He was invited by the magistrates of Dundee to be rector of the grammar-school of that town; but the faculty of advocates, anxious to retain him, augmented his salary to L. 30: 6: 8 Sterling, and he declined the offer.

In 1711 he assisted Bishop Sage in publishing Drummond of Hawthornden's works; and performed the same favour to Dr Abercrombie, who was then preparing for the press his Martial Atchievements.

In 1713 he was deprived of his friend Dr Pitcairne. Ruddiman. On this occasion he testified all the respect which friendship could inspire to the memory of his deceased patron and surviving family. He composed Pitcairne's epitaph, and conducted the sale of his library, which was disposed of to Peter the Great.

In 1714 the Rudiments of the Latin tongue were published. Eighteen or nineteen Latin grammars, composed by Scotchmen, had appeared before this period; yet such is the intrinsic value of this little treatise, that it soon superseded all other books on the subject, and is now taught in all the grammar-schools in Scotland. It has also been translated into other languages.

He was next called upon to publish the works of Buchanan. The value of these he enhanced much by an elaborate preface, his *Tabula Regum Scotiæ Chronologica*, and *Propriorum Nominum Interpretatio*. The interpretation of proper names was highly requisite; for Buchanan has so disguised them in the Roman dress, that the original name is scarcely discernible; and the preface puts the reader on his guard against the chronological errors and factious spirit of the history. Ruddiman also added a learned dissertation, intitled *De Metris Buchananæis Libellus*, and subjoined annotations critical and political on the History of Scotland. As he espoused the cause of Queen Mary, he raised against himself an host of enemies, and gave occasion to that celebrated controversy which has been carried on with much keenness and animosity, and with little intermission, even to the present times. For this work Ruddiman was promised L. 40 Sterling.

He had now been so long accustomed to superintend the press, that he was led to form the plan of erecting a printing-office himself (A). Accordingly, in the year 1715, he commenced printer in partnership with his brother Walter, who had been regularly bred to the business. Some years after he was appointed printer to the university, along with James Davidson bookseller.

The first literary society formed in Scotland was instituted in the year 1718. It probably derived its origin from the factious and turbulent spirit of the times. The learned, anxious perhaps to find some respite from the political dissensions of the day, endeavoured to procure it in elegant amusement; for one of the fundamental articles of the new association was, that the "affairs of church and state should not be introduced." Ruddiman and the masters of the high-school had the honour to found this society. They were afterwards joined by Lord Kaimes.

In 1725 the first part of his *Grammaticæ Latinæ Institutiones*, which treated of etymology, was published. The second part, which explained the nature and principles of syntax, appeared in 1731. He also wrote a third part on prosody, which is said to be more copious and correct than any other publication on the subject. When urged to give it to the public, he said dryly, "The age has so little taste, the sale would not pay the expence." Of this work he published an abridgement,

(A) It has long been an object of curiosity to ascertain the time at which the art of printing was introduced into Scotland. Mr Robertson, the keeper of the records, has lately discovered a patent of King James IV. which renders it certain that a printing-press was first established at Edinburgh during the year 1507, 30 years after Caxton had brought it into England. See PRINTING, p. 522.

Ruddiman. ment, to which he subjoined an abstract of his prosody.

Ruddiman next engaged in the management of a newspaper, an employment for which his genius and industry seemed to render him well qualified. But those who should expect either much information or amusement from this publication, would perhaps be greatly disappointed. The newspaper which he conducted was the Caledonian Mercury, and was established in 1720 by William Rolland a lawyer. Ruddiman acted only in the capacity of printer for five years; but upon the death of Mr Rolland in 1729, the property was transferred to him, or to his brother Walter and him conjunctly. This paper continued in the family of Ruddiman till the year 1772, when it was sold by the trustees of his grandchildren to Mr John Robertson.

The Caledonian Mercury was at first printed three times a week, on Monday, Tuesday, and Thursday, in a small 4to of four pages, with two columns in each page, and 50 lines in each column; so that the whole paper contained only 400 lines. It now contains in its folio size 2480 lines.

Mr Ruddiman, after the death of Mr Spottiswoode librarian, remained for some time in his former station; but was at length appointed keeper of the library, tho' without any increase of salary; and some years after Mr Goodal, the defender of Queen Mary, succeeded him in the office of sub-librarian.

The assiduous application of Ruddiman, supported by such learning, was intitled to wealth, which now indeed flowed upon him in what was at that period deemed great abundance. On the 1st of October 1735, it appeared from an exact statement of his affairs, that he was worth L. 1882 : 5 : 2 Sterling; and on the 20th of May, the ensuing year, his wealth had increased to L. 1985 : 6 : 3 Sterling. In 1710 he valued his effects at L. 24 : 14 : 9 Sterling.

In 1737 the schoolmasters and teachers in Edinburgh formed themselves into a society, in order to establish a fund for the support of their wives and children. Of this scheme Ruddiman was an active promoter, and was chosen treasurer. Perhaps it was this association which in 1742 gave the idea to the Scots clergy of forming their widows fund.

In 1739 he published *Selectus Diplomatum et Numismatum Scotiæ Thesaurus*. This work was projected and begun by Anderson (hence called *Anderson's Diplomata*), but was finished by Ruddiman. The preface, which is an excellent commentary on Anderson's performance, was written by Ruddiman, and displays a greater extent of knowledge than any of his other productions.

As Ruddiman had imbibed from his father those political principles which attached him to the family of Stuart, he probably did not remain an unconcerned spectator of the civil commotions which in 1745 agitated Scotland. He did not, however, take any active part in the rebellion. His principles he has been heard to say, induced him to be a quiet subject and a good citizen. He retired to the country during the summer of 1745; and while his fellow-citizens were spilling each others blood, he was more happily engaged in writing Critical Observations on Burman's Commentaries on Lucan's Pharsalia. The Caledonian Mercury was in the mean time marked with a jealous eye. His son, who had for some time been the principal manager of that newspaper, having copied a paragraph which was reckoned seditious from an English paper, was imprisoned. The solicitation of his father procured his release: but it was too late; for the unhappy young man had contracted a distemper in the tolbooth of Edinburgh which brought him to his grave. Ruddiman.

During the last seventeen years of his life Ruddiman was almost incessantly engaged in controversy. To this he was in some measure compelled by the violent attacks which some critics of the times had successively made upon his works. He was first called upon by Benson, auditor in the exchequer, to determine the comparative merit of Buchanan and Johnston as poets. He gave a decided preference to Buchanan in perspicuity, purity, and variety of style; but, like a candid critic, allowed Johnston to be superior in the harmony of his numbers. His next antagonist was Logan, one of the ministers of Edinburgh, a weak illiterate man, but an obstinate polemic. The subject of contest was, whether the crown of Scotland was strictly hereditary, and whether the birth of Robert III. was legitimate? Ruddiman maintained the affirmative in both points, and certainly far surpassed his antagonist in the powers of reasoning. He proved the legitimacy of Robert by the public records of the kingdom with a force of argument which admits of no reply; but in discussing the first question (by which he was led to consider the contest between Bruce and Baliol) he was not so successful: for there are many instances in the history of Scotland in which the brother succeeded to the crown in preference to the son. He showed, however, that the Scottish crown was at no period properly elective; and that, according to the old licentious constitution of the kingdom, the right of Bruce, who was the nearest in blood to the royal stock, was preferable to the claim of Baliol though descended from the eldest daughter.

But the labours of Ruddiman did not end when the pen dropt from the feeble hand of Logan. He was soon called upon to repel the attacks of Love, schoolmaster of Dalkeith, who maintained, in opposition to him, that Buchanan had neither repented of his treatment of Queen Mary, nor had been guilty of ingratitude to that princess. That Buchanan ever repented there is reason to doubt. Whether he was guilty of ingratitude let the unbiassed determine, when they are assured by authentic records that Mary conferred on him a pension for life of 500 pound Scots.

When Ruddiman had arrived at his eightieth year, and was almost blind, he was assailed by James Man, master of an hospital at Aberdeen, with a degree of rancour and virulence, united with some learning and ability, which must have touched him in a sensible manner, and alarmed his fears for his reputation after his decease. He was called a *finished pedant*, a *furious calumniator*, and a *corrupter of Buchanan's works*. The venerable old man again put on his armour, entered the lists, and gained a complete victory. Man, with all his acuteness, could only point out twenty errors in two folio volumes. Some of these were typographical, some trifling, and some doubtful. Ruddiman, with much pleasantry, drew up against Man an account of 469 errors, consisting of 14 articles, of which two or three may be produced as a specimen. 1. Falsehoods and prevarications, 20. 2. Absurdities, 69. 3. Passages from

which were misunderstood by Man, 10. [illegible] which he gained over this virulent adversary he did not long enjoy; for he died at Edinburgh on the 19th of January 1757, in the 83d year of his age, and was buried in the Grey Friars church-yard without any monument to distinguish his grave.

He was three times married, but left behind him only one daughter, Allison, who was married in 1747 to James Stewart, Esq. He is supposed to have died worth L. 3000 sterling.

He was of the middle size, of a thin and straight make, and had eyes remarkably piercing. Of his talents and learning his works afford the most satisfactory proofs. His memory was tenacious and exact. He could repeat long passages of his favourite poet Ovid, to the amount of 60 lines, and without omitting a word. He was so great a master in the Latin language, that he has perhaps been equalled by none since the days of Augustus.

Ruddiman has left a character unstained by vice, and distinguished by many virtues. His piety was exemplary. He spent Sunday in religious employment; and we are informed had prayers read to him every morning by his amanuensis when the infirmities of age required such an assistant. He was frugal of his time, neither indolent nor fond of amusement; and so remarkably temperate, that it is said he never was intoxicated. Though often forced into controversy, and treated with insolence, he never descended to scurrility and abuse, nor cherished resentment against his enemies. His candour was much admired in one instance in the favourable character which he published in the Caledonian Mercury of his antagonist Love (B), after his decease. Upon the whole, it must be allowed that Ruddiman has been of great service to classical literature, and an honour to his native country.

RUDESHEIM, a rich village of the Rhinegau, situated about five miles from the city of Mentz, contains about 2500 inhabitants. The wine of this place is looked upon as without comparison the best of the Rhinegau, and consequently of all Germany. Baron Riesbeck says, he found it much more fiery than that of Hochheim; but that for pleasantness of taste there is no comparison betwixt them. The best Rudesheim, like the best Hochheimer, sells upon the spot for three guilders the bottle. "You can (says our author) have no tolerable wine here for one guilder, nor any very good for two; at least I should prefer the worst Burgundy I ever tasted to any Rudesheimer I met with either here or at Mentz for these prices. Indeed the wine of our host (a rich ecclesiastic) was far better than any we could get at the inn. It stands to reason, that the same vintage furnishes grapes of very different degrees of goodness; but besides this, it is in the Rhinegau as every where else. The best wines are generally sent abroad by the poor and middling inhabitants, and the worst kept for internal consumption; for the expence of the carriage being the same in both cases, strangers had much rather pay a double price for the good than have the bad. It is only rich people, such as our host was, who can afford to keep the produce of their land for their own drinking. Upon this principle, I have eaten much better Swiss cheeses out of Switzerland than in it, and have drank much better Rhenish in the inns of the northern parts of Germany than in the country where the wine grows. The position of the country also contributes to render the wine dearer that it would otherwise be. As the best wine grows in its more northern parts, the easy transport by the Rhine to Holland, and all parts of the world, raises its price above its real value. The place where the flower of the Rudesheim wine grows is precisely the neck of the land, formed by the winding of the Rhine to the north after it has run to the westward from Mentz hither. This neck, which is a rock almost perpendicular, enjoys the first rays of the rising and the last of the setting sun. It is divided into small low terraces, which are carried up to the utmost top of the hill like steep stairs; these are guarded by small walls and earthen mounds, which are often washed away by the rain. The first vine was brought hither from France, and they still call the best grape the Orleannois. They plant the vine stocks very low, scarce ever more than four or five feet high. This way of planting the vine is favourable to the production of a great deal of wine, but not to its goodness, as the phlegmatic and harsh parts of it would certainly evaporate more, if the sap was refined through higher and more numerous canals. This is undoubtedly the reason why every kind of Rhenish has something in it that is harsh, sour, and watery. The harvest of the best vineyards, which are the lower ones, in the abovementioned neck of land, is often bought before-hand, at the advanced price of some ducats, by Dutch and other merchants. It must be a very rich stock to yield above four measures of wine.—You may easily imagine, that the cultivation of vineyards must be very expensive in this country, as the dung, which is extremely dear, must be carried up to the top of the mountains on the peasants' shoulders."

Rudesheim ‖ Rue.

RUDIMENTS, the first principles or grounds of any art or science, called also the elements thereof.

RUE, in botany. See Ruta.

Rue (Charles de la), a French orator and poet, was born at Paris in 1643. He was educated at the college of the Jesuits, where he afterwards became a professor of humanity and rhetoric. At an early age his talent for poetry disclosed itself. In 1667, when he was only 24 years old, he composed a Latin poem on the conquests of Louis XIV. which was so much esteemed by the

(B) The following character of Love was published in the Caledonian Mercury of the 24th of September 1750. "On Thursday morning died at Dalkeith, after a lingering illness, in the 55th year of his age, Mr John Love, rector of the grammar-school there; who, for his uncommon knowledge in classical learning, his indefatigable diligence, and strictness of discipline without severity, was justly accounted one of the most sufficient masters in this country." This character is doubtless just; though Love is now known to have been the schoolmaster satirized by Smollet in the beginning of his Roderic Random.

Rue, Ruellia.

the celebrated Peter Corneille, that he tranſlated it into French, preſented it to the King, and at the ſame time paſſed ſo high encomiums on the ſuperior merit of the original, that the author was received into the favour of that monarch, and ever after treated by him with ſingular reſpect.

De la Rue, anxious to preach the goſpel to the Canadians, requeſted leave of abſence from his ſuperiors; but having deſtined him for the pulpit, they refuſed to comply with his requeſt. Accordingly he commenced preacher, and became one of the moſt eminent orators of his age. In his diſcourſes he would probably have been too laviſh of his wit, if he had not been cautioned againſt it by a judicious courtier. "Continue (ſaid he) to preach as you do. We will hear you with pleaſure as long as you reaſon with us; but avoid wit. We value the wit contained in two verſes of a ſong more than all that is contained in moſt of the ſermons in Lent."

Reſpecting the delivery of ſermons, he entertained an opinion quite oppoſite to the eſtabliſhed practice of his countrymen. In France it was cuſtomary not to read ſermons from the pulpit, but to recite them from memory. This he conſidered as a laborious taſk not compenſated by any advantages. On the contrary, he was of opinion that reading ſermons was preferable.—The preacher, with his diſcourſe before him, could read it with eaſe, free from that timidity and embarraſſment which frequently attends the act of recollection; and he would ſave a conſiderable time which is uſually ſpent in committing it to memory. In theſe ſentiments many will not be diſpoſed to acquieſce: but, without pretending to determine the queſtion, it may be aſſerted, that a ſermon, whether read or recited, if ſpoken in a ſerious manner, and with proper inflections and tones of voice, will produce all the effects for which a ſermon is calculated.

De la Rue died at Paris on the 27th of May 1725, at the age of 82.

He was as amiable in ſociety as he was venerable in the pulpit. His converſation was pleaſant and inſtructive. His taſte and knowledge enabled him to converſe with eaſe, and to expreſs himſelf with propriety on every ſubject. He charmed his ſuperiors by his wit, and his inferiors by his affability. Though living amidſt the buſtle of the world, he was always prepared for the ſolitude of the cloſet and the retreat of the cloiſter. In the pulpit he poured forth the fineſt effuſions of eloquence in the moſt animated and impreſſive manner.—He publiſhed Paneggyrics, Funeral Orations, and Sermons. His beſt ſermon is that intitled *Des Calamités Publiques*, and his moſt admired funeral oration was compoſed on the Prince of Luxemburg. There are alſo tragedies of his writing, both in Latin and French, which were approved by Corneille. He was one of thoſe who publiſhed editions of the claſſics for the uſe of the Dauphin. Virgil, which fell to his ſhare, was publiſhed with notes, and a Life of the Poet, in 1675, 4to, and is a valuable and uſeful edition.

RUELLIA, in botany: A genus of the angioſpermia order, belonging to the didynamia claſs of plants; and in the natural method ranking under the 40th order, *Perſonatæ*. The calyx is quinquepartite; the corolla ſub-campanulated; the ſtamina approaching together in pairs; the capſule ſpringing aſunder by means of its elaſtic ſegments.

RUFF, in ichthyology; a ſpecies of PERCA.

RUFF, in ornithology, a ſpecies of TRINGA.

Ruff or Rufinus.

RUFFHEAD (Dr Owen), was the ſon of his Majeſty's baker, in Piccadily; who buying a lottery ticket for him in his infancy, which happened to be drawn a prize of 500l. this ſum was applied to educate him for the law. He accordingly entered in the Middle Temple; and ſeconded ſo well the views of his father, that he became a good ſcholar and an acute barriſter. While he was waiting for opportunities to diſtinguiſh himſelf in his profeſſion, he wrote a variety of pamphlets on temporary politics; and was afterwards diſtinguiſhed by his accurate edition of *The Statutes at Large*, in 4to. He now obtained good buſineſs, though more as a chamber-counſellor in framing bills for parliament than as a pleader; but his cloſe application to ſtudy, with the variety of works he engaged in as an author, ſo impaired his conſtitution, that after the laſt exertion of his abilities to defend the conduct of adminiſtration toward Mr Wilkes, by a pamphlet intitled, "The Caſe of the late election for the county of Middleſex conſidered," he was prevented from receiving the reward of a place in the Treaſury, by dying in 1769, at about 46 years of age. Some time before his death, biſhop Warburton engaged him to write his long promiſed *Life of Alexander Pope;* which, however, when executed, was very far from giving general ſatisfaction. The author attributed his ill ſucceſs to the deficiency of his materials; while the public ſeemed rather to be of opinion that, as a lawyer, he ventured beyond his proper line, when he aſſumed the taſk of a critic in poetry.

RUFFLING, or RUFFING, a beat on the drum. Lieutenant generals have three ruffles, major-generals two, brigadiers one, and governors one, as they paſs by the regiment, guard, &c.

RUFINUS was born about the middle of the fourth century at Concordia, an inconſiderable town in Italy. At firſt he applied himſelf to the belles lettres, and particularly to the ſtudy of eloquence. To accompliſh himſelf in this elegant art, he removed to Aquileia, a town at that time ſo celebrated that it was called a ſecond Rome. Having made himſelf acquainted with the polite literature of the age, he withdrew into a monaſtery, where he devoted himſelf to the ſtudy of theology. While thus occupied, St Jerome happened to paſs through Aquileia. Rufinus formed an intimate friendſhip with him; but to his inexpreſſible grief was ſoon deprived of the company of his new friend, who continued his travels through France and Germany, and then ſet out for the eaſt. Rufinus, unable to bear his abſence, reſolved to follow him. Accordingly he embarked for Egypt; and having viſited the hermits who inhabit the deſerts of that country, he repaired to Alexandria to hear the renowned Didymus. Here he was gratified with a ſight of St Melania, of whoſe virtue and charity he had heard much. The ſanctity of his manners ſoon obtained the confidence of St Melania, which continued without interruption during their reſidence in the eaſt, a period of 20 years. The Arians, who ſwayed the eccleſiaſtical ſceptre in the reign of Valens, perſecuted Rufinus with great cruelty. They threw him into a dungeon, loaded him with chains, and after almoſt ſtarving him to death, baniſhed him to the deſerts of Paleſtine. From this exile he was relieved by the pecuniary aid of St Melania, who employed her wealth in ranſoming theſe con-

Rufinus
Ruins.

confeſſors who had been condemned to priſon or baniſhment.

St Jerome, ſuppoſing that Rufinus would immediately proceed to Jeruſalem, wrote to one of his friends there, congratulating him on the proſpect of ſo illuſtrious a viſitor. To Jeruſalem he went, and having built a monaſtery on the Mount of Olives, he there aſſembled a great number of hermits, whom he animated to virtue by his exhortations. He converted many to the Chriſtian faith, and perſuaded more than 400 hermits who had taken part in the ſchiſm of Antioch to return to the church. He prevailed on many Macedonians and Arians to renounce their errors.

His attachment to the opinions of Origen ſet him at variance with St Jerome, who, being of a temper peculiarly irritable, not only retracted all the praiſes which he had laviſhed upon him, but loaded him with ſevere reproaches. Their diſputes, which were carried to a very indecent height, tended to injure Chriſtianity in the eyes of the weak. Theophilus, their mutual friend, ſettled their differences; but the reconciliation was of ſhort continuance. Rufinus having publiſhed a tranſlation of the principles of Origen at Rome, was ſummoned to appear before Pope Anaſtaſius. But he made a ſpecious apology for not appearing, and ſent a vindication of his work, in which he attempted to prove that certain errors, of which Origen had been accuſed, were perfectly conſiſtent with the opinions of the orthodox. St Jerome attacked Rufinus's tranſlation. Rufinus compoſed an eloquent reply, in which he declared that he was only the tranſlator of Origen, and did not conſider himſelf bound to ſanction all his errors. Moſt eccleſiaſtical hiſtorians ſay that Rufinus was excommunicated by Pope Anaſtaſius; but for this no good evidence has been brought. In 407, he returned to Rome; but the year after, that city being threatened by Alaric, he retired to Sicily, where he died in 410.

His works are, 1. A Tranſlation of Joſephus; 2. A Tranſlation of ſeveral works of Origen; 3. A Latin Verſion of Ten Diſcourſes of Gregory Nazianzen, and Eight of Baſil's; 4. Chromatius of Aquilea prevailed on him to undertake a Tranſlation of the Eccleſiaſtical Hiſtory of Euſebius, which engaged him almoſt ten years. He made many additions to the body of the work, and continued the hiſtory from the 20th year of Conſtantine to the death of Theodoſius the Great. Many parts of this work are negligently written, many things are recorded as facts without any authority but common report, and many things of great importance are entirely omitted. 5. A Vindication of Origen. 6. Two Apologies addreſſed to St Jerome. 7. Commentaries on the prophets Hoſea, Joel, and Amos. 8. Lives of the Hermits. 9. An Explanation of the Creed.

RUGEN, an iſland in the Baltic Sea, on the coaſt of Pomerania, over againſt Stralſund, about 23 miles in length and 15 in breadth, with the title of a principality. It is ſtrong both by art and nature, abounds in corn and cattle, and belongs to Sweden. The chief town is Bergen. E. Long. 14. 30. N. Lat. 54. 32.

RUINS, a term particularly uſed for magnificent buildings fallen into decay by length of time, and whereof there only remains a confuſed heap of materials. Such are the ruins of the tower of Babel, of the tower of Belus, two days journey from Bagdat, in Syria, on the banks of the Euphrates; which are now no more than a heap of bricks, cemented with Bitumen, and whereof we only perceive the plan to have been ſquare. Such alſo are the ruins of a famous temple, or palace, near Schiras, in Perſia, which the antiquaries will have to have been built by Ahaſuerus, and which the Perſians now call Tchelminar, or Chelminar; *q. d.* the 40 columns; becauſe there are ſo many columns remaining pretty entire, with the traces of others; a great quantity of baſſo-relievos, and unknown characters, ſufficient to ſhew the magnificence of the antique architecture. The moſt remarkable ruins now exiſting of whole cities are thoſe of Palmyra and Persepolis of the grandeur of which ſome idea may be formed from the views given in the plates referred to from theſe articles, to which may be added thoſe of Herculaneum and Pompeium. The magnificent ruins ſtill remaining in Rome, Athens, &c. of particular edifices, as temples, palaces, amphitheatres, aqueducts, baths, &c. it were endleſs to enumerate, and beyond the plan of this work to repreſent.

Ruizia, Rule.

RUIZIA, in Botany: A genus of the polyandria order, belonging to the monodelphia claſs of plants; and in the natural method ranking under the 37th order, *Columniferæ*. The calyx is double; the external are triphyllous; the internal are parted into five. The corolla conſiſts of five petals, inclining to the right hand ſide, and adhering to the ſtamina, which are from 30 to 40. It has ten ſtyli, and as many capſulæ. Theſe are compreſſed and membranous. In each capſule are two ſeeds. There are four ſpecies, viz. 1. *Cordata*; 2. *Lobata*; 3. *Palmata*; 4. *Lacinata*, all natives of Aſia and the Cape of Good Hope.

RULE, in matters of Literature, a maxim, canon, or precept, to be obſerved in any art or ſcience.

Rule, in a monaſtic ſenſe, a ſyſtem of laws or regulations, whereby religious houſes are governed, and which the religious make a vow, at their entrance, to obſerve. Such are the rules of the Auguſtins, Benedictins, Carthuſians, Franciſcans, &c. See Augustins, &c.

Rules of Court, in law, are certain orders made from time to time in the courts of law, which attorneys are bound to obſerve, in order to avoid confuſion; and both the plaintiff and defendant are at their peril alſo bound to pay obedience to rules made in court relating to the cauſe depending between them.

It is to be obſerved, that no court will make a rule for any thing that may be done in the ordinary courſe; and that if a rule be made, grounded upon an affidavit, the other ſide may move the court againſt it, in order to vacate the ſame, and thereupon ſhall bring into court a copy of the affidavit and rule. On the breach and contempt of a rule of court an attachment lies; but it is not granted for diſobedience to a rule, when the party has not been perſonally ſerved; nor for diſobeying a rule made by a judge in his chamber, which is not of force to ground a motion upon, unleſs the ſame be entered.

A rule of court is granted every day the courts at Weſtminſter ſit, to priſoners of the King's-bench or Fleet priſons, to go at large about their private affairs.

Rule of Three. See Arithmetic and Proportion.

Rule, or *Ruler*, an inſtrument of wood or metal, with ſeveral lines delineated on it; of great uſe in prac-

Rum. practical menſuration. When a ruler has the lines of chords, tangents, ſines, &c. it is called a *plane ſcale*.

RUM, a ſpecies of brandy or vinous ſpirits, diſtilled from ſugar-canes.

Rum, according to Dr Shaw, differs from ſimple ſugar-ſpirit, in that it contains more of the natural flavour or eſſential oil of the ſugar-cane; a great deal of raw juice and parts of the cane itſelf being often fermented in the liquor or ſolution of which the rum is prepared. The unctuous or oily flavour of rum is often ſuppoſed to proceed from the large quantity of fat uſed in boiling the ſugar; which fat, indeed, if coarſe, will uſually give a ſtinking flavour to the ſpirit in our diſtillations of the ſugar liquor or waſh, from our refining ſugar-houſes; but this is nothing of kin to the flavour of the rum, which is really the effect of the natural flavour of the cane.

The method of making rum is this: When a ſufficient ſtock of the materials are got together, they add water to them, and ferment them in the common method, though the fermentation is always carried on very ſlowly at firſt; becauſe at the beginning of the ſeaſon for making rum in the iſlands, they want yeaſt or ſome other ferment to make it work: but by degrees, after this, they procure a ſufficient quantity of the ferment, which riſes up as a head to the liquor in the operation; and thus they are able afterwards to ferment and make their rum with a great deal of expedition, and in large quantities.

When the waſh is fully fermented, or to a due degree of acidity, the diſtillation is carried on in the common way, and the ſpirit is made up proof: though ſometimes it is reduced to a much greater ſtrength, nearly approaching to that of alcohol or ſpirit of wine; and it is then called *double-diſtilled rum*. It might be eaſy to rectify the ſpirit, and bring it to much greater purity than we uſually find it to be of: for it brings over in the diſtillation a very large quantity of the oil; and this is often ſo diſagreeable, that the rum muſt be ſuffered to lie by a long time to mellow before it can be uſed; whereas, if well rectified, it would grow mellow much ſooner, and would have a much leſs potent flavour.

The beſt ſtate to keep rum in, both for exportation and other uſes, is doubtleſs that of alcohol or rectified ſpirit. In this manner it would be tranſported in one half the bulk it uſually is, and might be let down to the common proof-ſtrength with water when neceſſary: for the common uſe of making punch, it would likewiſe ſerve much better in the ſtate of alcohol: as the taſte would be clearer, and the ſtrength might always be regulated to a much greater exactneſs than in the ordinary way.

The only uſe to which it would not ſo well ſerve in this ſtate, would be the common practice of adulteration among our diſtillers: for when they want to mix a large portion of cheaper ſpirit with the rum, their buſineſs is to have it of the proof-ſtrength, and as full of the flavouring oil as they can, that it may drown the flavour of the ſpirits they mix with it, and extend its own. If the buſineſs of rectifying rum was more nicely managed, it ſeems a very practicable ſcheme to throw out ſo much of the oil, as to have it in the fine light ſtate of a clear ſpirit, but lightly impregnated with it: in this caſe it would very nearly reſemble arac, as is proved by the mixing a very ſmall quantity of it with a taſteleſs ſpirit, in which caſe the whole bears a very near reſemblance to arac in flavour. Rum ‖ Rumex.

Rum is uſually very much adulterated in Britain; ſome are ſo bare-faced as to do it with malt-ſpirit; but when it is done with molaſſes ſpirit, the taſtes of both are ſo nearly allied, that it is not eaſily diſcovered. The beſt method of judging of it is by ſetting fire to a little of it; and, when it has burnt away all the inflammable part, examining the phlegm both by the taſte and ſmell.

Rum is a conſiderable iſland, one of the Hebrides, or rather one continued rock, of nearly 30 miles in circumference. It is the property of Mr Maclean of Coll; contains 300 inhabitants; grazes cattle and ſheep; pays 200 l. rent annually: but has neither kelp, free-ſtone, nor lime.

RUMELIA, in geography, the ſame with ancient Greece; now a part of Turkey in Europe.

RUMEN, the paunch, or firſt ſtomach of ſuch animals as chew the cud; thence called *Ruminant Animals*. See *Comparative Anatomy*, n° 92, &c.

RUMEX, dock, in botany; A genus of the trigynia order, belonging to the hexandria claſs of plants; and in the natural method ranking under the 12th order *Holoraceæ*. The calyx is triphyllous; there are three connivent petals, and one triquetrous ſeed. There are 27 ſpecies; of which the moſt remarkable are,

1. The patientia, commonly called *patience rhubarb*. This was formerly much more cultivated in the Britiſh gardens than at preſent: the roots of this have been generally uſed for the monk's rhubarb, and has even been thought to be the true kind; but others ſuppoſe the ſecond ſort ſhould be uſed as ſuch. The root is large, and divides into many thick fibres; their outer cover is brown, but they are yellow within, with ſome reddiſh veins; the leaves are broad, long, and acute-pointed; their footſtalks are of a reddiſh colour; the ſtalks riſe ſix or ſeven feet high, and divided towards the top into ſeveral erect branches garniſhed with a few narrow leaves terminating with looſe ſpikes of large ſtaminous flowers. Theſe appear in June, and are ſucceeded by pretty large three-cornered ſeeds, whoſe coverings are entire, which ripen in autumn.

2. The alpinus, or monk's rhubarb, grows naturally on the Alps, but has long been cultivated in the Britiſh gardens. This hath large roots which ſpread and multiply by their offsets: they are ſhorter and thicker than the former, are of a very dark brown on the outſide, and yellow within. The leaves are of the round heart-ſhape, ſtanding upon long footſtalks. The ſtalks riſe from two to three feet high; they are thick, and have a few ſmall roundiſh leaves on the lower part; but the upper part is cloſely garniſhed with ſpikes of white flowers ſtanding erect cloſe to the ſtalks. Theſe appear in the latter end of May and are ſucceeded by large triangular ſeeds which ripen in Auguſt.

3. The aquaticus, or water-dock, grows naturally in ponds, ditches, and ſtanding waters, in many parts of Britain. It is ſuppoſed to be the herba Britannica of the ancients. It hath large roots which ſtrike deep into the looſe mud, ſending out leaves which are above two feet long. The ſtalks riſe five or ſix feet high when the plants grow in water, but in dry land ſeldom more than three: theſe are garniſhed with narrow

leaves,

Ruminant. Runner.

leaves among the ſpikes of flowers to the top. The flowers ſtand upon ſlender foot-ſtalks, which are reflexed: they are of an herbaceous colour, appear in June, and the ſeeds ripen in autumn.

4. The acutus, or ſharp-pointed dock, (the oxylapathum of the ſhops); but the markets are ſupplied with roots of the common docks which are indifferently gathered by thoſe who collect them in the fields, where the kind commonly called *butter-dock* (from its leaves being uſed to wrap up butter) is much more common than this. The roots of this are ſlender, and run downright, ſending out a few ſmall fibres; the ſtalks riſe about two feet high, garniſhed at bottom with leaves four inches long, and one and an half broad in the middle. They are rounded at their baſe, where they are ſlightly indented, but end in acute points. From the joints of the ſtalks come out alternately long foot-ſtalks, which ſuſtain the ſpikes of flowers, which grow in ſmall whorls round the ſtalks, at about an inch diſtant.

Theſe plants are but ſeldom cultivated; and ſo eaſily multiply by their numerous ſeeds, that they ſoon become troubleſome weeds where they once get an entrance.

RUMINANT, in natural hiſtory, is applied to an animal which chews over again what it has eat before; which is popularly called *chewing the cud*. Peyer, in a treatiſe *De Ruminantibus et Ruminatione*, ſhows that there are ſome animals which really ruminate; as oxen, ſheep, deer, goats, camels, hares, and ſquirrels: and that there are others which only appear to do ſo, as moles, crickets, bees, beetles, crabs, mullets, &c. The latter claſs, he obſerves, have their ſtomachs compoſed of muſcular fibres, by which the food is ground up and down as in thoſe which really ruminate. Mr Ray obſerves, that ruminants are all four-footed, hairy, and viviparous; ſome with hollow and perpetual horns, others with deciduous ones.

RUMP OF THE SACRIFICES, Moſes had ordained, that the rump and fat of the ſheep that were offered for peace-offering ſhould be put upon the fire of the altar (Lev. iii. 9. vii. 3. viii. 25. ix. 19.). The rump was eſteemed the moſt delicate part of the animal.

RUMPHIA, in botany: A genus of the monogynia order, belonging to the triandria claſs of plants; and in the natural method ranking with thoſe of which the order is doubtful. The calyx is trifid; the petals three; the fruit a trilocular plum.

RUNDLET, or RUNLET, a ſmall veſſel, containing an uncertain quantity of any liquor, from 3 to 20 gallons.

RUNGS, in a ſhip, the ſame with the floor or ground timbers; being the timbers which conſtitute her floor; and are bolted to the keel, whoſe ends are rung-heads.

Rung-Heads, in a ſhip, are made a little bending to direct the ſweep or mold of the buttocks and navel-timbers; for here the lines begin which make the compaſs and bearing of the ſhip.

RUNIC, a term applied to the language and letters of the ancient Goths, Danes, and other northern nations. See ALPHABET.

RUNNER, in the ſea-language, a rope belonging to the garnet and the two bolt-tackles. It is reeved in a ſingle block joined to the end of a pendant: it has at one end a hook to hitch into any thing; and, at the other, a double block, into which is reeved the fall of the tackle, or the garnet, by which means it purchaſes more than the tackle would without it,

Running-Thruſh & Rupert.

RUNNING-THRUSH, among farriers. See FARRIERY, ſect. xliv.

RUNNET, or RENNET, is the concreted milk found in the ſtomachs of ſucking quadrupeds, which as yet have received no other nouriſhment than their mother's milk. In ruminating animals, which have ſeveral ſtomachs, it is generally found in the laſt, though ſometimes in the next to it. If the runnet is dried in the ſun, and then kept cloſe, it may be preſerved in perfection for years. Not only the runnet itſelf, but alſo the ſtomach in which it is found, curdles milk without any previous preparation. But the common method is, to take the inner membrane of a calf's ſtomach, to clean it well, to ſalt and hang it up in brown paper: when this is uſed the ſalt is waſhed off, then it is macerated in a little water during the night, and in the morning the infuſion is poured into the milk to curdle it. But ſee more particularly the article CHEESE for a proper receipt to make runnet, upon which the quality of the cheeſe greatly depends.—The medicinal qualities of runnet are its acrimony, its reſolvent power, and its uſefulneſs in ſurfeits from food of difficult digeſtion.

RUPEE, a ſilver coin current in the Eaſt Indies, worth about 2 s. 6 d. ſterling.

RUPERT, or ROBERT. See ROBERT.

RUPERT, prince palatine of the Rhine, &c. ſon of Frederic prince elector palatine of the Rhine and Eliſabeth daughter to king James I. of England, was born in 1619. He gave proofs of his bravery at the age of 13; and in 1642 came over into England, and offered his ſervice to king Charles I. his uncle, who gave him a command in his army. At Edgehill he charged with incredible bravery, and made a great ſlaughter of the parliamentarians. In 1644 he ſeized the town of Cirenceſter; obliged the governor of Litchfield to ſurrender; and having joined his brother prince Maurice, reduced Briſtol in three days, and paſſed to the relief of Newark. In 1644 he marched to relieve York, where he gave the parliamentarians battle, and entirely defeated their right wing; but Cromwell charged the marquis of Newcaſtle with ſuch an irreſiſtible force, that prince Rupert was entirely defeated. After this the prince put himſelf into Briſtol, which ſurrendered to Fairfax after a gallant reſiſtance. The king was ſo enraged at the loſs of this city, ſo contrary to his expectation, that he recalled all prince Rupert's commiſſions, and ſent him a paſs to go out of the kingdom. In 1648 he went to France, was highly complimented by that court, and kindly received by king Charles II. who ſojourned there for the time. Afterward he was conſtituted admiral of the king's navy; infeſted the Dutch ſhips, many of which he took; and having engaged with De Ruyter, obliged him to fly. He died in 1682, and was interred in king Henry VII.'s chapel, Weſtminſter, with great magnificence. Mr Grainger obſerves, that he poſſeſſed in a high degree that kind of courage which is better in an attack than a defence; and is leſs adapted to the land ſervice than that of the ſea, where precipitate valour is in its element. He ſeldom engaged but he gained the advantage, which

Rupert || Ruſcus.

he generally loſt by purſuing it too far. He was better qualified to ſtorm a citadel, or even to mount a breach, than patiently to ſuſtain a ſiege; and would have furniſhed an excellent hand to a general of a cooler head. This prince is celebrated for the invention of prints in mezzotinto, of which he is ſaid to have taken the hint from a ſoldier's ſcraping his ruſty fuſil. The firſt print of this kind ever publiſhed was done by his highneſs, and may be ſeen in the firſt edition of Evelyn's Sculptra. The ſecret is ſaid to have been ſoon after diſcovered by Sherwin an engraver, who made uſe of a loaded file for laying the ground. The prince, upon ſeeing one of his prints, ſuſpected that his ſervant had lent him his tool, which was a channeled roller; but upon receiving full ſatisfaction to the contrary, he made him a preſent of it. The roller was afterwards laid aſide; and an inſtrument with a crenelled edge, ſhaped like a ſhoemaker's cutting-knife, was uſed inſtead of it. He alſo invented a metal called by his name, in which guns were caſt; and contrived an excellent method of boring them, for which purpoſe a water-mill was erected at Hackney-marſh, to the great detriment of the undertaker, as the ſecret died with the illuſtrious inventor.

Rupert's Drops, a ſort of glaſs-drops with long and ſlender tails, which burſt to pieces on the breaking off thoſe tails in any part; ſaid to have been invented by prince Rupert, and therefore called by his name. Concerning the cauſe of this ſurpriſing phenomenon ſcarce any thing that bears the leaſt appearance of probability has been offered. Their exploſion is attended in the dark with a flaſh of light; and by being boiled in oil, the drops are deprived of their exploſive quality.

RUPIN, or RAPIN, a town of Germany, in the marquiſate of Brandenburg, and capital of a duchy of the ſame name. It is divided into the Old and the New. The Old was nothing but an ancient caſtle, very well furniſhed, the late king of Pruſſia, before his father's death, reſiding there. New Rupin is ſeated on a lake, and become a conſiderable place of trade, with a manufactory of cloth. It is alſo noted for brewers. E. Long. 13. 23. N. Lat. 53. 0.

RUPPIA, in botany: A genus of the tetragynia order, belonging to the tetrandria claſs of plants; and in the natural method ranking under the 15th order, *Inundatæ*. There is neither calyx nor corolla; but four pedicellated ſeeds.

RUSCUS, KNEE-HOLLY, or *Butcher's Broom*: A genus of the ſyngeneſia order, belonging to the dicœcia claſs of plants; and in the natural method ranking under the 11th order, *Sarmentaceæ*. The male calyx is hexaphyllous; there is no corolla; the nectarium is central, ovate, and perforated at the top. The female calyx, corolla, and nectarium, are the ſame as in the male; there is one ſtyle, with a trilocular two-ſeeded berry.

The moſt remarkable ſpecies is the aculeatus, or common butcher's broom, common in the woods in many parts of England. It has roots compoſed of many thick fibres which twine about each other; from which ariſe ſeveral ſtiff green ſtalks about three feet high, ſending out from their ſides ſeveral ſhort branches, garniſhed with ſtiff, oval, heart-ſhaped leaves, placed alternately on every part of the ſtock, ending with ſharp prickly points. The flowers are produced in the middle, on the upper ſide of the leaves; they are ſmall, and cut into ſix parts; of a purple colour, ſitting cloſe to the midrib. They appear in June; and the female flowers are ſucceeded by berries as large as cherries, of a ſweetiſh taſte, which ripen in winter; when they are of a beautiful red colour. As this plant grows wild in moſt parts of England, it is rarely admitted into gardens; but if ſome of the roots are planted under tall trees in large plantations, they will ſpread into large clumps; and as they retain their leaves in winter, at that ſeaſon they will have a good effect. The ſeeds of this plant generally lie a year in the ground before they vegetate; and the plants ſo raiſed are long before they arrive at a ſize big enough to make any figure, and therefore it is much better to tranſplant the roots.—The root of this plant is accounted aperient, and in this intention is ſometimes made an ingredient in apozems and diet-drinks, for opening ſlight obſtructions of the viſcera and promoting the fluid ſecretions. This plant is uſed by the butchers for beſoms to ſweep their blocks. Huckſters place the boughs round their bacon and cheeſe to defend them from the mice; for they cannot make their way through the prickly leaves.

Ruſh, Ruſhworth.

RUSH, in botany. See JUNCUS.

Rush-Candles. See *Ruſh* CANDLES.

RUSHWORTH (John), the compiler of ſome uſeful collections reſpecting the affairs of ſtate, was born in Northumberland (England) about the year 1607, and was deſcended of honourable anceſtors. After attending the univerſity of Oxford for ſome time, he removed to Lincoln's Inn; but the ſtudy of law not ſuiting his genius, he ſoon deſerted it, in order to ſeek a ſituation where he might more eaſily gratify his love for political information. He frequented the meetings of parliament, and wrote down the ſpeeches both of the king and members. During the ſpace of 11 years, from 1630 to 1640, when no parliament was held, he was an attentive obſerver of the great tranſactions of ſtate in the ſtar-chamber, the court of honour, and exchequer chamber, when all the judges of England aſſembled there on caſes of great emergency. Nor did he neglect to obſerve with a watchful eye thoſe events which happened at a diſtance from the capital. He viſited the camp at Berwick, was preſent at the battle of Newborn, at the treaty of Rippon, and at the great council of York.

In 1640 he was appointed aſſiſtant to Henry Elſynge clerk to the houſe of commons, and thus had the beſt opportunities of being acquainted with their debates and proceedings. The commons conſidered him as a perſon worthy of confidence. In particular, they truſted him with carrying their meſſages to the king while he remained at York. And when the parliament created Sir Thomas Fairfax their general, Ruſhworth was appointed his ſecretary, and diſcharged the office much to the advantage of his maſter. When Fairfax reſigned his commiſſion, his ſecretary returned to Lincoln's Inn, and was ſoon after (in 1651-2) choſen one of the committee that was appointed to deliberate concerning the propriety and means of altering or new-modelling the common law. He was elected one of the repreſentatives for Berwick upon Tweed to the parliament which Richard Cromwell aſſembled in 1658, and was re-elected by the ſame town to the parliament which reſtored Charles II. to the crown.

After the Reſtoration, he delivered to the king ſeve-

Rushworth, Ruſſelia.

ral books of the privy-council, which he had preſerved in his own poſſeſſion during the commotions which then agitated the country. Sir Orlando Bridgeman keeper of the great ſeal choſe him his ſecretary in 1677, an office which he enjoyed as long as Sir Orlando kept the ſeals. In 1678 he was a third time choſen member for Berwick, and a fourth time in the enſuing parliament in 1679. He was alſo a member of the parliament which was convened at Oxford. The different offices he had held afforded him favourable opportunities of acquiring a fortune, or at leaſt an independence; yet, whether from negligence or prodigality, he was never poſſeſſed of wealth. Having run himſelf into debt, he was arreſted and committed to the King's Bench priſon, Southwark, where he lingered for the laſt ſix years of his life in the moſt deplorable condition. His memory and judgment were much impaired, partly by age and partly by the too frequent uſe of ſpirituous liquors. He died on the 12th of May 1690

His "Hiſtorical Collections of private Paſſages in State, weighty Matters in Law, remarkable Proceedings in Parliament," were publiſhed in folio at different times. The firſt part, comprehending the years between 1618 and 1629, appeared in 1659. The copy had been entruſted by Oliver Cromwell to Whitelock, with inſtructions to peruſe and examine it. Upon peruſing it, he thought it neceſſary to make ſome alterations and additions. The ſecond part was publiſhed in 1680; the third in 1692; the fourth and laſt, which comes down to the year 1648, was publiſhed in 1701; and altogether made ſeven volumes. Theſe underwent a ſecond edition in 1721; and the trial of the earl of Strafford was added, which made the eighth. This work has been much applauded by thoſe who condemn the conduct of Charles I. and accuſed of partiality by thoſe who favour the cauſe of that unhappy monarch. One perſon in particular, Dr John Nelſon of Cambridge, in a Collection of the Affairs of State publiſhed by the command of Charles II. undertook to prove, "that Ruſhworth has concealed truth, endeavoured to vindicate the prevailing detractions of the late times, as well as their barbarous actions, and with a kind of rebound to libel the government at ſecond-hand." This accuſation ſeems to be carried too far. His principles indeed led him to ſhow the king and his adherents in an unfavourable light, and to vindicate the proceedings of parliament; yet it cannot juſtly be affirmed that he has miſrepreſented or falſified any of the ſpeeches or facts which he has admitted into his collection. Perhaps he may have omitted ſome papers merely becauſe they were unfavourable to the party which he had eſpouſed; and is therefore not to be conſidered as an impartial hiſtorian who relates the whole truth, but as an honeſt lawyer, who ſtates all his facts fairly and candidly, but paſſes over ſuch as are injurious to his client's cauſe.

RUSSELIA, in botany: A genus of the trigynia order, belonging to the pentandria claſs of plants. The calyx is five leaved; the petals five above; the capſule is one-celled and many ſeeded.

Ruſſia. 1 Situation and extent.

RUSSIA, a very large and powerful kingdom, partly in Europe and partly in Aſia, is bounded on the north by the Northern Ocean, or Frozen Sea; on the eaſt it is waſhed by the Eaſtern Ocean, and is divided from America by Behring's (formerly Anian) Straits, which are about 73 verſts (A) wide. From thence, towards the ſouth, it extends along the chain of the Aleoutſkie iſlands, which approach the north-weſt coaſt of America; and from Kamtſchatka, towards the ſouth-weſt, it extends, by a chain of other iſlands, called Kourilſkie iſlands, as far as Japan; on the ſouth it borders on the Black Sea, on the nations which dwell at the foot of the Caucaſian mountains, on a part of Perſia, the Caſpian ſea, the hordes of Kirghiſkaiſacki, on Ziungoria, Chineſe Mungalia and Daouria (B); and on the weſt, on the Daniſh and Swediſh Lapland, the Baltic Sea, Courland, Livonia, Lithuania, Poland, and Turkey in Europe.

Plate CCCCXLIII.

Ruſſia occupies more than a ſeventh part of the known continent, and nearly the 26th part of the whole globe. Its greateſt extent from weſt to eaſt, viz. from the 39¼ to 207¼ degree of longitude, is 168 degrees; and if the iſlands of the Eaſtern Ocean be included, it will then be 185; ſo that the continental length of Ruſſia, viz. from Riga to Tchoukotſkoy Noſs, which is the eaſternmoſt promontory, will conſtitute about 8500 verſts. The greateſt extent of this empire from north to ſouth, that is, from the 78th to 50¼ degree of latitude, is 27¼ degrees. Hence the breadth of Ruſſia, that is, from the Cape Taymour, which is the north-eaſtern promontory, to Kiakhta, will conſtitute about 3200 verſts.

The greater part of this empire lies in the temperate zone, and a part of it, viz. that which is beyond the 66½ degree of latitude, lies in the frigid zone; and the whole ſurface contains above 2,150,000 ſquare verſts. There therefore is not at preſent, and never has been in any period, an empire, the extent of which could be compared to that of Ruſſia. The length and breadth of this immenſe empire, taken in a ſtraight line, may be thus diſcovered. Its furthermoſt point or ſpot on the north is the Taymour Cape, which is the moſt north-eaſtern promontory in the government of Tobolſk, lying in the 78th degree of latitude; its fartheſt point on the ſouth is the mouth of the river Soulak, falling into the Caſpian Sea in the government of Caucaſus, lying in the 43d degree of latitude; its weſternmoſt point is the iſland of Oezel in the government of Riga, in the 39¼ degree of longitude; and the furthermoſt point of it on the eaſt is the Tchoukotſkoy Noſs, which is the moſt eaſtern cape in the government of Irkoutſk, lying in the 207¼ degree of longitude.

2 Original inhabitants.

In ancient times Ruſſia was inhabited by various nations; ſuch as Hunns, Scythians, Sarmatians, Maſſagetes, Sclavonians, Cimbri, &c. of whom an account is given under the various detached articles in this work. The origin of the Ruſſians themſelves, though not prior to the ninth century, is ſtill covered with almoſt impenetrable obſcurity; partly owing to the ignorance and barbarity of the people, and partly to the miſtaken

(A) Verſta is the uſual meaſure of roads in Ruſſia, 1166 yards and two feet.

(B) Daouria is that extent of land which is traverſed by the river Amour. It is ſo called on account of the Daouri, its ancient inhabitants, who were a race of the Toungooſi or Manjouri.

RUSSIA
OR
MOSCOVY
NOVAIA ZEMLIA
Strait of Yugor
NORWAY
Kola
LAPLAND
WHITE SEA
Archangelsk
SWEDEN
Gulf of Bothnia
Gulf of Finland
BALTIC SEA
Riga
COURLAND
LITHUANIA
POLAND
Smolensk
Moghilev
Kalouga
Moscow
Vladimir
Kasimov
Novgorod
Rostov
Yaroslaf
Kostroma
Vologda
Ladoga L.
Onega L.
Ilmen L.
Tver
Torjok
Volga R.
Dwina R.
Petchora R.
Mezen R.
Pechora R.
Ural Mountains
Obdorskk
Tobolskk
Tara
Tomsk
Solikamskk
Verkhoturie
Perme
Ekatherinburg
Kungur
Kazan
Orenburg
Penza
Tambov
Voronez
Toula
Orel
Kursk
Kharkov
Poltava
Ekatherinoslav
Kherson
Otchakov
Tcherkask
Azof
Azof Sea
Taganrog
Mariopol
Crimea
Perekop
Isthmus of Perekop
Tartar Desarts or Plains
Desarts or Plains
the Wandering
Tartars
KIRGHISS KAISAKS
of the
MIDDLE HORDE
KIRGHIN
KAISAKS
of the
LITTLE HORDE
KAPAKALPAKI
of the
LOWER
HORDE
BOCKHARIA
CASPIAN SEA
Astrakan
Kizan
Derbent
Scale of Russian Versts
100
200
1000
Meridian of London

Ruſſia. miſtaken policy which yet prevails in the nation, of ſuppreſſing all accounts of their origin, and inquiries into their ancient ſtate and ſituation; of which we have a remarkable inſtance in the ſuppreſſion of a work by profeſſor Muller, intitled *De Originibus Gentis et Nominis Ruſſorum.*

3 Origin of the Ruſſians. According to ſeveral authors of credit, the Ruſſians derived their origin from the Slavi or Slavonians, corruptly called the *Sclavonians*, who ſettled firſt along the banks of the Volga, and afterwards near the Danube, in the countries named *Bugaria* and *Hungary*: but being driven from thence by the Romans (whom the Ruſſians call *Wolchers*, or *Wolctaners*), they firſt removed to the river Boryſthenes, or Dneiper, then overran Poland, and, as is reported, built the city of Kiow. Afterwards they extended their colonies farther north, to the rivers which run into the *Ilmen* lake, and laid the foundation of the city of Novogorod. The towns of Smolenſk and Tiernikow appear alſo to have been built by them, though the dates of theſe events cannot be aſcertained. The moſt ancient inhabitants, not only of Ruſſia, but all over Siberia, quite to the borders of China, are called *Tſhudi*: for profeſſor Muller, on inquiring in thoſe parts by whom the ancient buildings and ſepulchral monuments he ſaw there, were erected, was everywhere anſwered, that they were the works of the Tſhudi, who in ancient times had lived in that country.

In the ninth century, the Scandinavians, that is, the Danes, Norwegians, and Swedes, emigrated from the north, and, croſſing the Baltic, went to ſeek habitations in Ruſſia. They firſt ſubdued the Courlanders, Livonians, and Eſthonians; and, extending their conqueſts ſtill farther, they exacted tribute from the Novogorodians, ſettled kings over them, and traded as far as Kiow, and even to Greece. Theſe new invaders were called *Waregers*; which, according to profeſſor Muller, ſignifies "ſea-faring people;" or, if derived from the old northern word *war*, it ſignifies "warlike men." To theſe Waregers the name of *Ruſſes*, or *Ruſſians*, is thought by the moſt eminent authors to owe its origin; but the etymology of the word itſelf is entirely uncertain.

4 Ruſſia at firſt divided into a number of petty kingdoms. In the dark ages of which we are ſpeaking, it is pretty certain that Ruſſia was divided among a great number of petty princes, who made war upon each other with the ferocity and cruelty of wild beaſts; ſo that the whole country was reduced to the utmoſt miſery; when Goſtomiſel, a chief of the Novogorodians, pitying the unhappy fate of his countrymen, and ſeeing no other method of remedying their calamities, adviſed them to offer the government of their country to the Waregers. The propoſal was readily accepted, and three princes of great abilities and valour were ſent to govern them; namely, Ruric, Sincus, and Truwor, generally ſuppoſed to have been brothers. The firſt took up his reſidence at Ladoga, in the principality of Great Novogorod; the ſecond at Bielo Oiero, or the White Lake; and the third kept his court at Iſborik, or, according to others, at a ſmall town, then called *Twertzog*, in the principality of Pleſkow. The three brothers reigned amicably, and made conſiderable additions to their dominions; all of which at length devolved to Ruric by the death of Sincus and Truwor; but what the conqueſts of the two brothers were, we have no records to inform us of. Ruſſia. 5

Ruric, to his honour, became zealous for the ſtrict adminiſtration of juſtice; and iſſued a command to all the boyars who poſſeſſed territories under him, to exerciſe them in an exact and uniform manner. To this end, it was neceſſary there ſhould be general laws. And this naturally leads us to conjecture, that letters were not entirely unknown in his dominions. Ruric chief and ſovereign.

The Ruſſian empire continued to flouriſh till the end of the reign of Wolodomir, who aſcended the throne in the year 976. Having ſettled the affairs of his empire in peace, he demanded in marriage the princeſs Anne, ſiſter to the Greek emperor Baſilius Porphyrogenitus. His ſuit was granted, on condition that he ſhould embrace Chriſtianity. With this the Ruſſian monarch complied; and that vaſt empire was thenceforward conſidered as belonging to the patriarchate of Conſtantinople. Wolodomir received the name of *Baſilius* on the day on which he was baptized; and, according to the Ruſſian annals, 20,000 of his ſubjects, were baptiſed the ſame day. Michael Syra, or Cyrus, a Greek, ſent by Photius the patriarch of Conſtantinople, was accepted as metropolitan of the whole country. At the ſame time, Wolodomir put away all his former wives and concubines, of whom he had upwards of 800, and by whom he had 12 ſons, who were baptized on the ſame day with himſelf. The idols of paganiſm were now thrown down; churches and monaſteries were erected, towns built, and the arts began to flouriſh. The Sclavonian letters were now firſt introduced into Ruſſia; and Wolodomir ſent miſſionaries to convert the Bulgarians; but only three or four of their princes came to him and were baptized. Theſe events happened in the year 987. 6 Chriſtianity introduced. 7 Learning and the arts cultivated.

Wolodomir called the arts from Greece, cultivated them in the peaceable periods of his reign, and rewarded their profeſſors with generoſity, that he might diſpel the clouds of ignorance which enveloped his country, call forth the genius of his countrymen, and render them happy. He alſo founded public ſchools, and enacted a law concerning the methods of inſtructing youth, and directing the conduct of the maſters appointed to inſtruct them. He died in 1008, and, contrary to all rules of ſound policy and prudence, divided his empire among his 12 ſons. The conſequence was, that they fell to making war and deſtroying one another as ſoon as their father was dead. Suantepolk, one of the brothers, having deſtroyed and ſeized upon the dominions of two others, was himſelf driven out by Jariſlaus, and obliged to fly to Boleſlaus king of Poland. This brought on a dreadful war betwixt the Poles and Ruſſians; in which the former were victorious, and the latter loſt a great part of their dominions, as has been related under the article Poland. 8 A civil war.

Jariſlaus finding himſelf unable to oppoſe the king of Poland, now turned his arms againſt the reſt of his brothers, all of whom he diſpoſſeſſed of their dominions, and ſeized them for himſelf. He next attacked the Coſſacks, over whom he gained ſeveral advantages. After which he ventured once more to try his fortune with Boleſlaus: but in this ſecond expedition he was attended with worſe ſucceſs than before; being now reduced to the condition of a vaſſal and tributary to the victorious

victorious monarch. However, in the reign of Mieczſlaus II. the ſucceſſor of Boleſlaus, the Ruſſians again ſhook off the yoke, and a laſting peace was confirmed by the marriage of Mieczſlaus with the ſiſter of Wolodomir.

9 Ruſſia becomes tributary to Poland.

Jariſlaus now continued to enjoy the empire quietly, and was ſo much addicted to reading, that he devoted even a part of the night to his ſtudies. He invited men of letters to his court, and cauſed many Greek books to be tranſlated into the Ruſſian language. It was he that in the year 1019, gave the people of Novogorod ſeveral laws, under the title of *Gramota Soudebnaia*, to be obſerved in the courts of juſtice. Theſe are the firſt laws that were reduced to writing in Ruſſia; and, what renders them remarkable, is the conformity they have with thoſe of the other northern nations. He founded a public ſchool at Novogorod, where he maintained and educated 300 children at his own expence. His court was the moſt brilliant of the north, and furniſhed an aſylum to unfortunate princes. He died in 1052; and fell into the ſame error which his father had committed, by dividing his dominions among his five ſons. This produced a repetition of the bloody ſcenes which had been acted by the ſons of Wolodomir: the Poles took the advantage of the diſtracted ſtate of affairs to make continual inroads and invaſions; and the empire continued in the moſt deplorable ſituation till the year 1237, when it was totally ſubdued by the Tartars. We are not informed of any particulars of this remarkable event, further than that innumerable multitudes of theſe barbarians, headed by their khan Batto, or Battus, after ravaging great part of Poland and Sileſia, broke ſuddenly into Ruſſia, where they committed the greateſt cruelties. Moſt of the Ruſſian princes, among whom was the great duke George Sevoloditz, were made priſoners, and racked to death; and, in ſhort, none found mercy but ſuch as acknowledged themſelves the ſubjects of the Tartars. The imperious conqueror impoſed upon the Ruſſians every thing that is moſt mortifying in ſlavery; inſiſting that they ſhould have no other princes than ſuch as he approved of; that they ſhould pay him yearly a tribute, to be brought by the ſovereigns themſelves on foot, who were to preſent it humbly to the Tartarian ambaſſador on horſeback. They were alſo to proſtrate themſelves before the haughty Tartar; to offer him milk to drink; and, if any drops of it fell down, to lick them up; a ſingular mark of ſervility, which continued near 260 years.

10 Subdued by the Tartars.

George Sevoloditz was ſucceeded by his brother Michael Sevoloditz Zernigouſki; who oppoſed the Tartars, but was defeated by them, and loſt his life. He left three ſons, Feodor, Alexander, and Andrew, whoſe wars with each other ended in the death of them all. A ſon of Alexander, and of the ſame name, was then placed on the throne by the Tartars; and his ſon Danilow, or Daniel Alexandrovitz, removed his court from Wolodimir to Moſcow, where he firſt aſſumed the title of *Great duke of Wolodimir and Moſcow*. Daniel Alexandrovitz left two ſons, Gregory and John; the former of whom, named *Kalita*, from a purſe he uſed always to carry about him filled with money for the poor, aſcended the throne; but he was ſoon aſſaſſinated by another prince named *Demetri Michaelovitz*, who was himſelf put to death for it by the Tartars; and John, likewiſe ſurnamed *Kalita*, was then made czar. This John left three ſons, John, Simon, and Andrew; and the eldeſt of theſe, commonly called *Ivan Ivanovitz*, was made czar, with the approbation of the Tartars, on whom he was dependent.

11 The empire haraſſed by internal diſſentions.

During theſe ſeveral reigns, which fill a ſpace of upwards of 100 years, and which all hiſtorians have paſſed over for want of records concerning them, the miſeries of a foreign yoke were aggravated by all the calamities of inteſtine diſcord and war; whilſt the knights of Livonia, or brothers of the ſhort-ſword, as they are ſometimes called, a kind of military order of religious, on one ſide, and the Poles on the other, catching at the opportunity, attacked Ruſſia, and took ſeveral of its towns, and even ſome conſiderable countries. The Tartars and Ruſſians, whoſe intereſts were in this caſe the ſame, often united to oppoſe their common enemies; but were generally worſted. The Livonians took Pleſkow; and the Poles made themſelves maſters of Black Ruſſia, the Ukraine, Podolia, and the city of Kiow. Caſimir the Great, one of their kings, carried his conqueſts ſtill farther. He aſſerted his pretenſions to a part of Ruſſia, in right of his relation to Boleſlaus duke of Halitz, who died without iſſue, and forcibly poſſeſſed himſelf of the duchies of Perzemyſlia, Halitz, and Luckow, and of the diſtricts of Sanock, Lubackzow, and Trebowla; all which countries he made a province of Poland.

12 And by external enemies.

The newly-conquered Ruſſians were ill-diſpoſed to brook the government of the Poles; whoſe laws and cuſtoms were more contrary to their own than thoſe of the Tartars had been. They joined the latter to rid themſelves of the yoke; and aſſembled an army numerous enough to overwhelm all Poland, but deſtitute of valour and diſcipline. Caſimir, undaunted by this deluge of barbarians, preſented himſelf at the head of a few troops on the borders of the Viſtula, and obliged his enemies to retire.

Demetrius Ivanovitz, ſon of Ivan Ivanovitz, who commanded in Moſcow, made frequent efforts to rid himſelf of the galling yoke. He defeated in ſeveral battles Maymay khan of the Tartars; and, when conqueror, refuſed to pay them any tribute, and aſſumed the title of *great duke of Muſcovy*. But the oppreſſors of the north returned in greater numbers than before; and Demetrius, at length overpowered, after a ſtruggle of three years, periſhed with his whole army, which, if we may credit hiſtorians, amounted to upwards of 240,000 men.

13 A great army cut in pieces by the Tartars.

Baſilius Demetrivitz revenged his father's death. He attacked his enemies, drove them out of his dominions, and conquered Bulgaria. He made an alliance with the Poles, whom he could not ſubdue; and even ceded to them a part of his country, on condition that they ſhould help him to defend the reſt againſt any new incurſions of the Tartars. But this treaty was a weak barrier againſt ambition. The Ruſſians found new enemies in their allies; and the Tartars ſoon returned.—Baſilius Demetrivitz had a ſon who was called after his name, and to whom the crown ought naturally to have deſcended. But the father, ſuſpecting his ligitimacy, left it to his own brother Gregory, a man of a ſevere and tyrannical diſpoſition, and therefore hated by the people, who aſſerted the ſon's right, and proclaimed him their ſovereign. The Tartars took cognizance

of

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of the diſpute, and terminated it in favour of Baſilius; upon which Gregory had recourſe to arms, drove his nephew from Moſcow to the principality of Uglitz, and forcibly uſurped and kept poſſeſſion of his throne. Upon the death of Gregory, Baſilius returned to Moſcow; but Andrew and Demetrius, ſons of the late uſurper, laid ſiege to that city, and obliged him to retire to the monaſtery of Troitz, where they took him priſoner, with his wife and ſon, and put out his eyes: hence the appellation of *jemnoi*, "blind," by which this Baſilius is diſtinguiſhed. The ſubjects of this unfortunate prince, incenſed at the cruel treatment he had received, forced the perpetrators of it to fly to Novogorod, and reinſtated their lawful ſovereign at Moſcow, where he died.

14 John Baſilovitz I. retrieves the affairs of Ruſſia.

In the midſt of this general confuſion, John Baſilovitz I. by his invincible ſpirit and refined policy, became both the conqueror and deliverer of his country, and laid the firſt foundation of its future grandeur. Obſerving with indignation the narrow limits of his power at his acceſſion to the throne, after the death of his father Baſilius the Blind, he began immediately to revolve within himſelf the means of enlarging his dominions. Marriage, though he had in reality no regard or inclination for women, ſeemed to him one of the beſt expedients he could begin with; and accordingly he demanded and obtained Maria, ſiſter of Michael duke of Twir; whom he ſoon after depoſed, under pretence of revenging the injuries done to his father, and added this duchy to his own territories of Moſcow. Maria, by whom he had a ſon named *John*, who died before him, did not live long; and upon her death he married Sophia, daughter of Thomas Paleologus, who had been driven from Conſtantinople, and forced to take ſhelter at Rome, where the pope portioned this princeſs, in hopes of procuring thereby great advantages to the Romiſh religion; but his expectations were fruſtrated, Sophia being obliged to conform to the Greek church after her arrival in Ruſſia. What could induce Baſilovitz to ſeek a conſort at ſuch a diſtance, is nowhere accounted for; unleſs it be, that he hoped by this means to eſtabliſh a pretenſion to the empire of the eaſt, to which her father was the next heir: but however that may be, the Ruſſians certainly owed to this alliance their deliverance from the Tartar yoke. Shocked at the ſervile homage exacted by theſe proud victors, her huſband going to meet their ambaſſadors at ſome diſtance from the city, and ſtanding to hear what they had to ſay; whilſt they were at dinner, Sophia told him, that ſhe was ſurpriſed to find that ſhe had married a ſervant to the Tartars. Nettled at this reproach, Baſilovitz feigned himſelf ill when the next deputation from the Tartars arrived, and under that pretence avoided a repetition of the ſtipulated humiliating ceremonial. Another circumſtance equally diſpleaſing to this princeſs was, that the Tartars had, by agreement, within the walls of the palace of Moſcow, houſes in which their miniſters reſided; to ſhow their power, and at the ſame time watch the actions of the great duke. To get rid of theſe, a formal embaſſy was ſent to the Tartarian khan, to tell him, that Sophia having been favoured with a viſion from above, ordering her to build a temple in the place where theſe houſes ſtood, her mind could not be at eaſe till ſhe had fulfilled the divine command; and therefore his leave was deſired to pull them down, and give his people others. The khan conſented: the houſes within the Kremlin were demoliſhed; and no new ones being provided, the Tartar reſidents were obliged to leave Moſcow; their prince not being able to revenge this breach of promiſe, by reaſon of a war he was then engaged in with the Poles. Baſilovitz taking advantage of this circumſtance, and having in the mean time conſiderably increaſed his forces, openly diſclaimed all ſubjection to the Tartars, attacked their dominions, and made himſelf maſter of Caſan, where he was ſolemnly crowned with the diadem of that kingdom, which is ſaid to be the ſame that is now uſed for the coronation of the Ruſſian ſovereigns. The province of Permia, with great part of Lapland and Aſiatic Bulgaria, ſoon ſubmitted to him; and Great Novogorod, a city then ſo famous that the Ruſſians uſed to expreſs its vaſt importance by the proverbial expreſſion of, *Who can reſiſt God and the Great Novogorod?* was reduced by his generals after a ſeven years ſiege, and yielded him an immenſe treaſure; no leſs, ſay ſome writers, than 300 cart loads of gold and ſilver, and other valuable effects. Alexander Witold, waiwode of Lithuania, was in poſſeſſion of this rich place, from which he had exacted for ſome years an annual tribute of 100,000 rubles, a prodigious ſum for thoſe days and for that country. When it was taken by John Baſilovitz, he, the better to ſecure his conqueſt, put it under the protection of the Poles, voluntarily rendered himſelf their tributary for it, and accepted a governor from the hand of their king Caſimir, a weak and indolent prince, from whom he well knew he had nothing to fear. The Novogorodians continued to enjoy all their privileges till about two years after; when John, ambitious of reigning without controul, entered their city with a numerous retinue, under pretence of keeping to the Greek faith, he being accuſed of an intention to embrace the Romiſh religion; and with the aſſiſtance of the archbiſhop Theophilus, ſtripped them all of their remaining riches. He then depoſed the treacherous prelate, and eſtabliſhed over Novogorod new magiſtrates, creatures of his own; deſtroying at once, by this means, a whole city, which, had its liberties been protected, and its trade encouraged, might have proved to him an inexhauſtible fund of wealth. All the north beheld with terror and aſtoniſhment the rapid increaſe of the victor's power: foreign nations courted his alliance; and the ſeveral petty princes of Ruſſia ſubmitted to him without reſiſtance, acknowledging themſelves his vaſſals.

15 Marries a Greek princeſs,

16 Who excites him to ſhake off the Tartar yoke.

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17 His ſucceſs.

The Poles, however, complained loudly of his late breach of faith in regard to Novogorod, and threatened revenge: upon which Baſilovitz, elated with his ſucceſſes, with the riches he had amaſſed, and with the weak condition of moſt of his neighbours, ſent a body of troops into Lithuania, and ſoon became maſter of ſeveral of its towns. Caſimir applied for aſſiſtance to Matthias king of Hungary: but was anſwered by this laſt, that his own ſoldiers were quite undiſciplined; that his auxiliaries had lately mutinied for want of pay; and that it was impoſſible for him to raiſe a new army out of the neighbouring countries. The Poliſh monarch in this diſtreſs was obliged to purchaſe of John a ceſſation of arms for two years, during which the Muſcovite made new acceſſions to his dominions.

18 Invades Lithuania and obliges the Poles to ſue for peace.

The dukes of Servia, whoſe territories were about

500

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500 miles in extent, had long thought themſelves ill uſed by the Lithuanians on account of their religion, which was that of the Greek church; and wanted to withdraw from their ſubjection to Poland, and put themſelves under the protection of Ruſſia. The following accident afforded them the wiſhed-for preſence. Their envoys arriving at Wilna, deſired admittance to the king's preſence: which being refuſed, one of them endeavoured to force his way in; but the porter ſhut the door rudely againſt him, and in ſo doing broke one of his fingers. The ſervant was immediately put to death for this offence: but the Servians, by no means ſatisfied with that, returned home in a great fury, and prevailed upon their countrymen to ſubmit themſelves and their country to the Muſcovites. Caſimir made ſeveral attempts to recall them, but to no purpoſe.

19 Servia ſubmits to him.

Matthias king of Hungary dying about this time, two of his ſons, Uladiſlaus, then king of Bohemia, and John Albert, contended for the vacant crown. Caſimir wanted to give it to the latter, whom he accordingly aſſiſted to the utmoſt of his power; and to enable him the better ſo to do, though he was in great want of money as well as men, he purchaſed a renewal of the truce with the Ruſſians, and thereby gave John Baſilovitz time to eſtabliſh himſelf in his new acquiſitions.

Caſimer died in the year 1492, and was ſucceeded on the throne of Poland by his ſon John Albert, who, totally diſregarding the Ruſſians, involved himſelf unneceſſarily in a war with the brave Stephen duke of Moldavia: and, though he had at the ſame time both the Tartars and Turks againſt him, his propenſity to pleaſure, and his laſcivious diſpoſition, rendered him ſo indolent, that he not only did not ſo much as attempt to moleſt Baſilowitz in any of his poſſeſſions, but concluded a peace with him on terms very advantageous to the latter; and even entered into a treaty, by which he ſtipulated not to aſſiſt the Lithuanians, though they had choſen his brother Alexander for their duke, in caſe the Ruſſians ſhould attack them, as it was ſuppoſed they would. Alexander thinking to parry the inconveniences of this agreement, and to guard againſt the deſigns of his enemies, demanded in marriage Baſilowitz's daughter, Helena, by his ſecond wife Sophia, and obtained her. The Lithuanians then flattered themſelves with a proſpect of tranquillity: but the ambitious *czar*, for Baſilovitz had aſſumed that title ſince his conqueſt of Caſan, aiming only at the increaſe of dominion, ſoon found a pretence to break with his new allies, by alleging, that Poliſh Ruſſia, as far as the river Berezina, had formerly belonged to his anceſtors, and therefore ſhould be his; and that Alexander, by his marriage-contract, had engaged to build a Greek church at Wilnaw for his Ruſſian conſort, which he had not done, but on the contrary endeavoured to force the Poliſh Ruſſians to embrace the religion of the church of Rome. In conſequence of this plea, he ſent into the territories of his ſon-in-law, by different ways three armies, which reduced ſeveral places, deſtroyed the country about Smolenſko, and defeated the Lithuanian field-marſhal Oſtroſky near the river Wedraſch, where he fell unawares into an ambuſh of the Ruſſians. Alexander raiſed a new army of Sileſians, Bohemians, and Moravians; but they came too late, the Ruſſians having retired with their plunder. Elated by their ſucceſs againſt the Lithuanians, they invaded Livonia in the year 1502, with 130,000 men: but Walter Von Plettenberg, grand-maſter of the knights of the croſs, with only 12,000 men, gave them a total overthrow; killing 10,000 of his enemies, with ſcarce any loſs on his own ſide. Baſilovitz diſpirited by this defeat, and being then engaged in a war with the Tartars, the Poles, and the city of Pleſkow, immediately diſpatched an embaſſy to Plettenberg, and concluded a truce with him for 50 years. At the ſame time he begged of that general to ſend to Moſcow, that he might ſee him, one of the *iron-dragoons*, as he called them, who had performed wonders in the late engagement. Von Plettenberg readily complied; and the czar, ſtruck with admiration, rewarded the cuiraſſier's accompliſhments with conſiderable honours and preſents.

Ruſſia. 22 Is defeated in Livonia and obliged to retire.

20 Concludes an advantageous treaty with the Poles.

21 His ſucceſs in Lithuania.

Alexander had been elected king of Poland upon the death of his brother John Albert, which happened in the beginning of this year: but the Poles refuſed to crown his conſort Helena, becauſe ſhe adhered to the Greek religion. Provoked at this affront, and probably ſtill more ſtimulated by ambition, Baſilovitz reſolved again to try his fortune with them; and accordingly ordered his ſon Demetrius, now the eldeſt, to march againſt Smolenſko, and reduce that city. The young prince did all that could be done: but the vigorous reſiſtance of the beſieged, and the arrival of the king of Poland with a numerous army, obliged the Ruſſians to raiſe the ſiege and return home; and the czar was glad to make a freſh truce with the Poles for ſix years, upon the eaſy terms of only returning the priſoners he had taken. Some writers ſay, that flying into a violent paſſion with his ſon the moment he ſaw him, and imputing the miſcarriage of this expedition to his want of courage or conduct, he gave him a blow which laid him dead at his feet; to which is added, that remorſe for this raſh action carried his father to his grave: but this account is not confirmed by authors whoſe authority can be relied on. Certain it is, however, that neither of them long ſurvived this event; and that Demetrius died firſt; for Sophia, who had gained an abſolute aſcendant over her huſband, and wanted to give the ſovereignty to her own children, perſuaded him by various artful inſinuations to ſet aſide and impriſon his grandſon Demetrius, the only child of the late John, whom he had by his firſt wife Maria, and declare her then eldeſt ſon, Gabriel, his ſucceſſor. Age and infirmities had rendered the czar ſo weak, that he blindly followed the iniquitous advice; but ſhortly after finding his end approach, he ſent for young Demetrius, expreſſed great repentance for his barbarity towards him, and on his death-bed declared him his lawful ſucceſſor. He died in November 1505, after a reign of 55 years; leaving behind him an immenſe territory, chiefly of his own acquiring.

23 He dies and is ſucceeded by his ſon who takes the name of Baſilius.

The czar was no ſooner dead, than his ſon Gabriel Ivanovitz, at the inſtigation of his mother Sophia, put an end to the life of the young Demetrius, by confining him in priſon, where he periſhed with hunger and cold; after which Gabriel was crowned by the name of *Baſilius*, and took the title of *czar*, as well as all the other titles belonging to the ſovereignty. On his acceſſion to the throne he expected that the Poles would be in confuſion about the election of a new ſovereign; but his expectations being defeated by their unanimous election

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election of Sigiſmund I. a prince of a mild and peaceable diſpoſition, he ſent an army into Lithuania, and laid ſiege to Smolenſko. The place made a brave reſiſtance, till news arrived that the crown-troops of Poland were coming to their aſſiſtance, with the additional aid of 80,000 Crim Tartars; on which the Ruſſians returned home with the utmoſt precipitation. They were, however, quickly followed by the Poles, who reduced the czar to ſubmit to ſuch terms as they pleaſed to impoſe. Baſilius remained quiet till he thought himſelf capable of revenging the injuries he had ſuſtained; after which, pretending to ſet out upon ſome other expedition, he marched with a numerous army, and encamped in the neighbourhood of Pleſkow, where the Poles, preſuming on the late treaty, received him as a friend and ally. But in the mean time the Muſcovite prieſts of the Greek church preached to their hearers concerning the expediency of having a ſovereign of their own religion; and brought them to ſuch a height of enthuſiaſm, that they murdered their magiſtrates, and opened their gates to the czar, who made them all ſlaves, and ſent them away to different parts, replacing them with Muſcovites, the better to ſecure his conqueſt. Soon after he took alſo the city of Smolenſko; and the Swedes, alarmed at his rapid progreſs, deſired a prolongation of the truce, at that time ſubſiſting between the two ſtates, for 60 years longer. The duchy of Lithuania was the great object of the deſigns of Baſilius; and to accompliſh his deſign, he ordered Ivan Czeladin, a man of great reſolution, and enterprizing even to raſhneſs, to march thither with 80,000 men. The army of the Poles did not exceed 35,000 men, but was commanded by a moſt experienced general. The two armies met on the oppoſite banks of the Dneiper, near Orſova, and the Poles paſſed that river in ſight of their enemies. Czeladin's officers adviſed him to fall upon the enemy when about half of them had croſſed the river; but that general, too confident of ſucceſs, replied, that the other half would then run away, and he was determined to gain a complete victory. The Lithuanians began the attack, but were repulſed by the Ruſſians; who imprudently following them, loſt an advantageous ſituation, and found themſelves at once expoſed to the full fire of the enemy's artillery. The Poliſh cavalry then ruſhed in among them ſword in hand, and made dreadful havoc; the trembling Ruſſians ſcarce even attempting to defend themſelves. Thoſe who endeavoured to fly, fell into the Dneiper and were drowned; and all the reſt, including Czeladin himſelf, were made ſlaves.

24 He takes Pleſkow and Smolenſko.

25 But is utterly defeated by the Poles.

26 Diſtreſs of Baſilius.

Baſilius was at Smolenſko when he received the news of this dreadful defeat; on which he immediately fled to Moſcow, where his danger increaſed daily. The Crim-Tartars ravaged his dominions, and the emperor Maximilian, with whom he had been in alliance, deſerted him; his troops were utterly defeated in Livonia, where he was obliged to ſubmit to a peace on diſhonourable terms; but what theſe terms were hiſtorians do not inform us. In the mean time, the king of Poland ſtirred up the Tartars to invade Ruſſia, while the Ruſſian monarch in his turn endeavoured to excite them to an invaſion of Poland. Theſe barbarians, equally treacherous to both parties, firſt invaded and ravaged Podolia, a province of Poland; and then having invaded Ruſſia and defeated the armies of the czar in the year 1521, they poured in thither in ſuch incredible multitudes, that they quickly made themſelves maſters of Moſcow. An army, which had been ſent to oppoſe their progreſs, was defeated near the river Occa; and the czar's brother Andrew, who commanded it, was the very firſt who fled. Baſilius with great difficulty made his way to Novogorod; ſo terrified, that he hid himſelf by the way under a hay-cock, to avoid a ſtraggling party of the enemy. The Tartars, however, ſoon obliged him to ſign a writing, by which he acknowledged himſelf their vaſſal, and promiſed to pay them a tribute of ſo much a head for every one of his ſubjects. Beſides this, Machmetgerei, the commander of the Tartars, cauſed his own ſtatue to be ſet up at Moſcow, as a mark of his ſovereignty; compelled Baſilius to return to his capital, to bring thither in perſon the firſt payment of this tribute, and, as a token of his ſubmiſſion, to proſtrate himſelf before his ſtatue. Machmetgerei then left Moſcow, and returned home with an immenſe booty, and upwards of 80,000 priſoners, who were made ſlaves, and ſold like cattle to the Turks and other enemies of the Chriſtian name. In his way back he attempted to take the city of Rezan; but was repulſed with conſiderable loſs by Iwan Kowen, who commanded in that place for the Ruſſians. Here the Tartar general narrowly eſcaped with his life, his coat being ſhot through with a muſket-ball; and the Muſcovites pulled down his ſtatue, and broke it to pieces as ſoon as the conquerors had left them.

Ruſſia.

27 Moſcow taken by the Tartars.

The Tartars were no ſooner gone, than Baſilius began to talk in a high ſtrain of the revenge he intended to take of them; but was never able to execute his threats. He died in 1533; and was ſucceeded by his ſon Ivan or John Baſilovitz, an infant of five years of age.

28 Baſilius dies and is ſucceeded by his ſon John Baſilovitz II.

During the minority of the young prince, his two uncles Andrew and George endeavoured to deprive him of the crown; but their attempts were defeated by the care and activity of his guardians; and the Poles alſo immediately commenced hoſtilities, but could make little progreſs. The new czar, as ſoon as he entered the 19th year of his age, ſhowed an inclination for reſcuing his ſubjects out of that deſperate ſtate of ignorance and barbariſm in which they had been hitherto immerſed. He ſpent a ſplendid embaſſy to the emperor Charles V. who was then at Augſburg, to deſire the renewal of the treaty of friendſhip which had been concluded with his father Maximilian; and offering to enter into a league with him againſt the Turks, as enemies to the Chriſtian religion; for his farther information in which, particularly in regard to the doctrine and ceremonies of the Latin church, he requeſted that his ambaſſador might be allowed to ſend from Germany to Ruſſia proper prieſts to inſtruct him and his ſubjects. With theſe he likewiſe deſired to have ſome wiſe and experienced ſtateſmen, able to civilize the wild people under his government; and alſo, the better to help to poliſh them, he requeſted that he would ſend mechanics and artiſts of every kind; in return for all which he offered to furniſh two tons of gold yearly, for 20 years together, to be employed in the war againſt the Turks. The emperor readily agreed to the deſire of the czar; and the Ruſſian ambaſſador accordingly engaged

29 His embaſſy to Charles V.

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gaged upwards of 300 German artiſts, who were directed to repair to Lubec, in order to proceed from thence to Livonia. But the Lubeckers, who were very powerful at that time, and aimed at nothing leſs than the engroſſing of the whole commerce of the north, ſtopped them, and repreſented ſtrongly to the emperor, in the name of all the merchants in Livonia, the dangerous conſequence of thus affording inſtructions to the Ruſſians, who would ſoon avail themſelves of it to ruin their trade, and diſtreſs the ſubjects of his imperial majeſty. The workmen and others intended for Ruſſia were eaſily prevailed upon to return to their reſpective homes; and the czar's ambaſſador was arreſted upon his arrival at Lubec, and impriſoned there at the ſuit of the Livonians: however, he made his eſcape ſhortly after; and the czar, though provoked to the laſt degree at the behaviour of the Lubeckers, was obliged for ſome time to ſuſpend his reſentment.

30 The German artiſts prevented by the Lubeckers from going to Ruſſia.

The firſt enterpriſe of Baſilovitz now was againſt the Tartars of Caſan, who had hitherto been ſuch formidable enemies. In this he was attended with great ſucceſs; the whole territory was conquered in ſeven years; but the capital, named alſo *Caſan*, being well fortified and bravely defended, made ſuch reſiſtance as quite diſheartened the beſiegers, and made them think of abandoning their enterpriſe. Baſilovitz being informed of this, haſtened to them with a conſiderable reinforcement, endeavoured to revive their drooping courage, and exhorted them to puſh the ſiege with redoubled vigour. However, the greater part, deaf to all his remonſtrances, after loudly inſiſting upon a peace with the Tartars, and leave to return home, proceeded to mutiny, and fell upon their comrades who were for continuing the war. Baſilovitz, alarmed at this event, ruſhed in among the combatants, and with great difficulty parted them: but neither menaces nor intreaties, nor even a promiſe of giving them the whole plunder of the city if they took it, could prevail on them to continue the war. Their rage at laſt prompted them to threaten the life of their ſovereign; who, to provide for his own ſafety, was obliged to make the beſt of his way to Moſcow; and the mutineers, no longer regarding any command, inſtantly returned thither.

31 Caſan conquered by Baſilius, all except the capital.

32 His method of puniſhing a treachery.

Baſilovitz, though juſtly incenſed at this inſolence, took a method of puniſhing it which does honour to his humanity. Having ſelected a guard of 2000 of his beſt troops, he ordered a great feaſt, to which he invited his principal nobles and officers, to each of whom, according to the Ruſſian cuſtom, he gave very rich garments. The chief of the ſeditious were clothed in black velvet; and after the dinner was over, he made a ſpeech to the whole company, ſetting forth the behaviour of his troops before Caſan, their contempt of his commands, and their conſpiracy to take away his life: to which he added, that he was doubly ſorry to find the inſtigators of ſuch wickedneſs among thoſe who were ſtyled, and who ought to be, his faithful counſellors; and that thoſe who knew themſelves to be guilty of ſuch atrocious wickedneſs could not do better than voluntarily to ſubmit themſelves to his mercy. Upon this, moſt of them immediately threw themſelves at his feet, and implored his pardon. Some of the moſt criminal were executed, but the reſt were only impriſoned.

Immediately after this puniſhment of the rebels, Baſilovitz marched with a freſh army to re-inveſt Caſan before the Tartars had time to recover themſelves. The beſieged ſtill made an obſtinate defence, and the Ruſſians again began to be diſpirited; upon which the czar ordered his pioneers to undermine the walls of the citadel, a practice then quite unknown to the Tartars. This work being completed, he directed his prieſts to read a ſolemn maſs to the whole army, at the head of which he afterwards ſpent ſome time in private prayer, and then ordered fire to be ſet to the powder, which acted ſo effectually, that great part of the foundation was immediately blown up, and the Muſcovites ruſhing into the city, ſlaughtered all before them; while the aſtoniſhed Tartars, crowding out at the oppoſite gate, croſſed the river Caſanka, and fled into the foreſts. Among the priſoners taken on this occaſion were Simeon king of Caſan with his queen; both of whom were ſent to Moſcow, where they were treated with the utmoſt civility and reſpect.

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33 The capital of Caſan again beſieged and taken.

34 Aſtracan reduced.

Encouraged by this ſucceſs, Baſilovitz invaded the country of Aſtracan, the capital of which he ſoon reduced; after which he prepared to revenge himſelf on the Livonians for their behaviour in ſtopping the German artiſts. John Baſilovitz I. had concluded a truce with this people for 50 years; which being now expired, Iodocus, archbiſhop of Dorpt and canon of Munſter in Weſtphalia, ſenſible of the danger to which he was expoſed by the vicinity of the Ruſſians, requeſted the czar to give him a prolongation of the truce. Baſilovitz deſired him to chooſe whether he would have a truce for five years longer, on condition that all the inhabitants of his archbiſhopric ſhould pay to him the annual tribute of a fifth part of a ducat for each perſon, which the people of Dorpt had formerly agreed to pay to the grand-dukes of Pleſkow; or, for 20 years, on this farther condition that he and the Livonians ſhould rebuild all the Ruſſian churches which had been demoliſhed in their territories at the time of the reformation, and allow his ſubjects the free exerciſe of their religion. Iodocus evaded an anſwer as long as he could: but finding at laſt that the affair grew ſerious, he levied a conſiderable ſum from his ſubjects, and fled with it to Munſter, where he reſigned his prebend and married a wife. His ſucceſſor, whoſe name was *Herman*, and the deputies from Livonia, accepted of the conditions, and ſwore to obſerve them; with this additional clauſe, that the prieſts of the Romiſh communion ſhould be exempted from paying tribute.

35 Negociation with the Livonians.

36 Their treachery.

But though the Livonians ſwore to the obſervation of theſe terms, they were at that very time in treaty with Guſtavus Vaſa, king of Sweden, to join them in attacking Ruſſia. The king of Sweden very readily complied with their deſires; upon which Baſilowitz invaded Finland. Guſtavus advanced againſt him with a powerful army; but as neither the Poles nor Livonians gave him any aſſiſtance, he was obliged to conclude a treaty with the czar, and ſoon after to evacuate the country. Finland was at this time governed by William of Furſtenberg grand-maſter of the Livonian knights, and the archbiſhop of Riga, with ſome other prelates; between whom a quarrel happened about this time, which ſoon facilitated the deſigns of Baſilovitz on the country. The archbiſhop, after attempting

37 State of Finland.

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tempting to ſet himſelf above the grand-maſter even in civil affairs, and to perſecute thoſe who adhered to the confeſſion of Auguſburg, choſe for his coadjutor in the archbiſhopric of Riga Chriſtopher duke of Mecklenburg. From the abilities and haughty temper of this lord, the Livonian knights apprehended that they had reaſon to fear the ſame fate which had befallen the Teutonic order in Pruſſia; and the ſtep itſelf was, beſides, unprecedented, and contrary to the eſtabliſhed laws of the country. Theſe diſcontents were heightened by letters ſaid to be intercepted from the archbiſhop to his brother Albert duke of Pruſſia, inviting this laſt totally to ſuppreſs the order of Livonian knights, and to ſecularize their poſſeſſions, eſpecially in Finland; ſo that an open war broke out among the contending parties, and the archbiſhop was ſeized and made priſoner. He was, however, ſoon releaſed through the mediation of the emperor of Germany and other potentates, backed by the powerful preparations of the Pruſſians to avenge his cauſe; but in the mean time, the ſtrength of their country being totally exhauſted, the Livonians were obliged, inſtead of preparing for war, to ſue to the Czar for peace. Baſilovitz replied, that he did not believe their intentions to be ſincere while they kept 6000 Germans in pay; and therefore, if they meant to treat of peace, they muſt begin with diſmiſſing theſe troops. The Livonians, having no longer any power to reſiſt, did as they were ordered; but it availed them nothing. In 1558 an army of 100,000 Ruſſians entered the diſtrict of Dorpt, and laid every thing waſte before them with the moſt ſhocking cruelty. After this they entered the territories of Riga, where they behaved with equal inhumanity; and having at laſt ſatiated themſelves with blood and treaſure, they retired with an immenſe booty and a great number of priſoners.

38 Livonia ravaged by the Ruſſians.

39 The Livonians ſue for peace, but the treaty is broken off.

The Livonians, now thoroughly convinced of their own folly in expoſing themſelves to the reſentment of the exaſperated Ruſſians, ſent ambaſſadors to ſue for peace in good earneſt. Theſe offered the Czar a preſent of 30,000 ducats, and prevailed upon him to grant their nation a truce for four months, during which they returned home to get the money. But in this interval the Livonian governor of the city of Nerva, out of an idle frolic, fired ſome cannon againſt Ivanogorod or Ruſſian Nerva, ſituated on the oppoſite ſide of the river, and killed ſeveral of the Czar's ſubjects who were aſſembled in an open place quite unarmed. The Ruſſians, out of regard to the truce, did not even attempt to make repriſals; but immediately acquainted Baſilovitz with what had happened: which ſo incenſed the Czar, that when the Livonian ambaſſadors arrived, he told them, he looked upon their nation to be a ſet of perjured wretches, who had renounced all honeſty; that they might go back with their money and propoſals, and let their countrymen know that his vengeance would ſoon overtake them.

40 Livonia ravaged a ſecond time.

The ambaſſadors were ſcarce arrived in Livonia, when an army of 300,000 Ruſſians entered the diſtrict of Nerva, under the command of Peter Shegaledrii, who had been a famous pirate in the Euxine ſea. He took the city of Nerva in nine days, and very ſpeedily made himſelf maſter of Dorpt, where he found immenſe treaſures. Several other garriſons, terrified by the approach of ſuch numbers, quitted their poſts; ſo that the Ruſſians became maſters of a great part of Livonia almoſt without oppoſition. At laſt, Gothard Kettler, grand-maſter of the knights of Livonia, intreated Chriſtian III. king of Denmark to take Riga, Revel, and the countries of Garnland, Wirrland, and Eſthonia, under his protection; but the advanced age of that monarch, the diſtance of the places, and the want of ſufficient power to withſtand ſo potent an adverſary, made him decline the offer. However, he aſſiſted them with ſome money and powder, of which they ſtood greatly in need. Having then applied, without ſucceſs, firſt to the emperor of Germany, and then to the court of Sweden, Kettler put himſelf under the protection of the Poles, who had hitherto been ſuch formidable enemies to the Ruſſians. In the mean time the latter purſued their conqueſts; they took the city of Marienburg, laid waſte the diſtrict of Riga, deſtroyed Garnland, and penetrated to the very gates of Revel. Felin, in which was the beſt artillery of the whole country, became theirs by the treachery of its garriſon; and here William of Furſtenberg the old grand-maſter was taken, and ended his days in a priſon at Moſcow. The diſtracted ſituation of the Livonian affairs now induced the biſhop of Oeſel to ſell his biſhopric to Ferdinand king of Denmark, who exchanged it with his brother Magnus for a part of Holſtein. The diſtricts of Revel and Eſthonia put themſelves under the protection of Sweden; and then the grand-maſter, finding himſelf deſerted on all ſides, ſuppreſſed the order of which he was the chief, and accepted of the duchy of Courland, which he held as a fief of the crown of Poland.

41 The order of Livonian knights ſuppreſſed.

The Czar ſaw with pleaſure the diviſion of Livonia between the Swedes and Poles, which, he rightly judged, would produce quarrels between the two nations, and thus give him the fairer opportunity of ſeizing the whole to himſelf. Accordingly, in 1564, the Swedes offered him their aſſiſtance againſt the Poles; but he, judging himſelf to be ſufficiently ſtrong without them, attacked the Poles with his own forces, and was twice defeated, which checked his farther operations in Livonia. In 1569 he entered into a treaty of commerce with England, captain Richard Chancellor having a ſhort time before diſcovered a paſſage to Archangel in Ruſſia through the White Sea, by which that empire was likely to be ſupplied with foreign goods, without the aſſiſtance either of Poland or Livonia. To the diſcoverers of this new paſſage Baſilovitz granted many excluſive privileges; and after the death of queen Mary renewed the alliance with queen Elizabeth, and which has been continued without interruption ever ſince.

42 A treaty between Ruſſia and England.

In the mean time, however, a prodigious army of Turks and Tartars entered Muſcovy, with a deſign to ſubdue the whole country. But Zerebrinov, the Czar's general, having attacked them in a defile, put them to flight with conſiderable ſlaughter. Then they retired towards the mouth of the Volga, where they expected a conſiderable reinforcement; but being cloſely purſued by the Ruſſians and Tartars in alliance with them, they were again defeated and forced to fly towards Azov on the Black Sea. But when they came there, they found the city almoſt entirely ruined by the blowing up of a powder magazine. The Ruſſians then attacked their ſhips there, took ſome, and ſunk the reſt; by which means almoſt the whole army periſhed with hunger or the ſword of the enemy.

43 An army of Turks and Tartars cut off.

From this time the empire of Ruſſia became ſo formidable

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midable, that none of the neighbouring nations could hope to make a total conqueſt of it. The Poles and Swedes indeed continued to be very formidable enemies; and, by the inſtigation of the former, the Crim Tartars, in 1571, again invaded the country with an army of 70,000 men. The Ruſſians, who might have prevented their paſſing the Volga, retired before them till they came within 18 miles of the city of Moſcow, where they were totally defeated. The Czar no ſooner heard this news than he retired with his moſt valuable effects to a well-fortified cloyſter; upon which the Tartars entered the city, plundered it, and ſet fire to ſeveral churches. A violent ſtorm which happened at the ſame time ſoon ſpread the flames all over the city; which was entirely reduced to aſhes in ſix hours, though its circumference was upwards of 40 miles. The fire likewiſe communicated itſelf to a powder-magazine at ſome diſtance from the city; by which accident upwards of 50 rods of the city wall, with all the buildings upon it, were deſtroyed; and, according to the beſt hiſtorians, upwards of 120,000 citizens were burnt or buried in the ruins, beſides women, children, and foreigners. The caſtle, however, which was ſtrongly fortified, could not be taken; and the Tartars hearing that a formidable army was coming againſt them under the command of Magnus duke of Holſtein, whom Baſilovitz had made king of Livonia, thought proper to retire. The war, nevertheleſs, continued with the Poles and Swedes; and the Czar being defeated by the latter after ſome trifling ſucceſs, was reduced to the neceſſity of ſuing for peace. But the negociations being ſomehow or other broken off, the war was renewed with the greateſt vigour. The Livonians, Poles, and Swedes, having united in a league together againſt the Ruſſians, gained great advantages over them; and, in 1579, Stephen Battori, who was then raiſed to the throne of Poland, levied an army expreſly with a deſign of invading Ruſſia, and of regaining all that Poland had formerly claimed, which indeed was little leſs than the whole empire. As the Poles underſtood the art of war much better than the Ruſſians, Baſilovitz found his undiſciplined multitudes unable to cope with the regular forces of his enemies: and their conqueſts were ſo rapid, that he was ſoon obliged to ſue for peace: which, however, was not granted; and it is poſſible that the number of enemies which now attacked Ruſſia might have overcome the empire entirely, had not the allies grown jealous of each other; the conſequence of which was, that in 1582 a peace was concluded with the Poles, in which the Swedes were not comprehended. However, the Swedes finding themſelves unable to effect any thing of moment after the deſertion of their allies, were fain to conclude a truce; ſhortly after which the Czar, having been worſted in an engagement with the Tartars died in the year 1584.

44 Moſcow taken and burnt by the Tartars.

45 War with Sweden and Poland.

46 Death of Baſilovitz.

This great prince was ſucceeded by his ſon Theodore Ivanovitz; a man of ſuch weak underſtanding, that he was totally unfit for government. Under him, therefore, the Ruſſian affairs fell into confuſion; and Boris Gudenov, a nobleman whoſe ſiſter Theodore had married, found means to aſſume all the authority. At laſt, unable to bear even the name of a ſuperior, he reſolved to uſurp the throne. For this purpoſe he cauſed the Czar's brother Demetrius, at that time only nine years of age, to be aſſaſſinated; and afterwards, knowing that no truſt could be put in an aſſaſſin, he cauſed him alſo to be murdered leſt he ſhould divulge the ſecret. In 1597 the Czar himſelf was taken ill and died, not without great ſuſpicion of his being poiſoned by Gudenov; of which indeed the Czarina was ſo well convinced, that ſhe would never afterwards ſpeak to her brother.

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47 Extinction of the line of Ruric.

With Theodore ended the line of Ruric, who had governed the empire of Ruſſia for upwards of 700 years. Boris, who in reality was poſſeſſed of all the power, and would indeed have ſuffered nobody elſe to reign, artfully pretended to be unwilling to accept the crown, till compelled to it by the intreaties of the people; and even then he put the acceptance of it on the iſſue of an expedition which he was about to undertake againſt the Tartars. The truth of the matter, however, was, that no Tartar army was in the field, nor had Boris any intention of invading that country; but by this pretence he aſſembled an army of 500,000 men, which he thought the moſt effectual method of ſecuring himſelf in his new dignity. In 1600 he concluded a peace with the Poles, but reſolved to continue the war againſt the Swedes; however, being diſappointed in ſome of his attempts againſt that nation, he entered into an alliance with the Swediſh monarch, and even propoſed a match between the king's brother and his daughter. But while theſe things were in agitation, the city of Moſcow was deſolated by one of the moſt dreadful famines recorded in hiſtory. Thouſands of people lay dead in the ſtreets and highways, with their mouths full of hay, ſtraw, or even the moſt filthy things which they had been attempting to eat. In many houſes the fatteſt perſon was killed in order to ſerve for food to the reſt. Parents were ſaid to have eaten their children, and children their parents, or to have ſold them to buy bread. One author (Petrius) ſays, that he himſelf ſaw a woman bite ſeveral pieces out of a child's arm as ſhe was carrying it along; and captain Margaret relates, that four women having ordered a peaſant to come to one of their houſes, under pretence of paying him for ſome wood, killed and eat up both him and his horſe. This dreadful calamity laſted three years, notwithſtanding all the means which Boris could uſe to alleviate it; and in this time upwards of 500,000 people periſhed in the city.

48 Dreadful famine at Moſcow.

In 1604 a young man appeared, who pretended to be Demetrius, whom Boris had cauſed to be murdered, as we have already ſeen. Being ſupported by the Poles, he proved very troubleſome to Boris all his lifetime; and after his death deprived Theodore Boriſſovitz, the new Czar, of the empire; after which he aſcended the throne himſelf, and married a Poliſh princeſs. However, he held the empire but a ſhort time, being killed in an inſurrection of his ſubjects; and the unhappy Czarina was ſent priſoner to Jaroſlaw.

After the death of Demetrius, Zuſki, who had conſpired againſt him, was choſen Czar; but rebellions continually taking place, and the empire being perpetually haraſſed by the Poles and Swedes, in 1610 Zuſki was depoſed, and Uladiſlaus ſon of Sigiſmund king of Poland was elected. However, the Poles repreſenting to Sigiſmund, that it would be more glorious for him to be the conqueror of Ruſſia, than only the father of its ſovereign, he carried on the war with ſuch fury, that the Ruſſians in deſpair fell upon the Poles, who reſided in great numbers at Moſcow. The Poles being well armed

49 Uladiſlaus the king of Poland's ſon elected Czar.

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armed and moſtly ſoldiers, had greatly the advantage; however, they were on the point of being oppreſſed by numbers, when they fell upon the moſt cruel method of enſuring their ſucceſs that could be deviſed. This was by ſetting fire to the city in ſeveral places; and while the diſtreſſed Ruſſians ran to ſave their families, the Poles fell upon them ſword in hand. In this confuſion upwards of 100,000 people periſhed; but the event was, that the Poles were finally driven out, and loſt all footing in Ruſſia.

50 The Poles finally expelled.

The expulſion of the Poles was ſucceeded by the election of Theodorovitz Romanov, a young nobleman of 17 years of age, whoſe poſterity, till the acceſſion of the preſent Empreſs, continued to enjoy the ſovereignty. He died in 1646, and was ſucceeded by his ſon Alexis; whoſe reign was a continued ſcene of tumult and confuſion, being haraſſed on all ſides by external enemies, and having his empire perpetually diſturbed by internal commotions.

51 Selection of the laws of Ruſſia made by Alexis.

The ſources of theſe commotions were found in the multiplicity and inconſiſtency of the laws at that period, and in the jarring claims of the nobles on the borders. An *emanoy ukaſe*, or perſonal order, which is an edict of the ſovereign, ſigned with his own hand, is the only law of Ruſſia. Theſe edicts are as various as the opinions, prejudices, paſſions, or whims of men; and in the days of Alexis, they produced endleſs contentions. To remedy this evil, he made a ſelection, from all the edicts of his predeceſſors, of ſuch as had been familiarly current for a hundred years; preſuming that theſe either were founded in natural juſtice, or during ſo long a currency had formed the minds of the people to conſider them as juſt. This digeſt, which he declared to be the common law of Ruſſia, and which is prefaced by a ſort of inſtitute, is the ſtandard law-book at this day known by the title of the *Ulogenie* or *Selection;* and all edicts prior to it were declared to be obſolete. He ſoon made his *novellæ*, however more bulky than the Ulogenié; and the additions by his ſucceſſors are beyond enumeration. This was undoubtedly a great and uſeful work; but Alexis performed another ſtill greater.

52 State of courts of judicature, and power of old families.

Though there are many courts of judicature in this widely extended enpire, the emperor has always been lord paramount, and could take a cauſe from any court immediately before himſelf. But as ſeveral of the old nobles had the remains of principalities in their families, and held their own courts, the ſovereingn or his miniſters, at a diſtance up the country, frequently found it difficult to bring a culprit out of one of theſe hereditary feudal juriſdictions, and try him by the laws of the empire. This was a very diſagreeable limitation of imperial power; and the more ſo, that ſome families claimed even a right to repledge. A lucky opportunity offered of ſettling this diſpute; and Alexis embraced it with great ability.

53 Addreſs of Alexis in getting rid of this laſt evil.

Some families on the old frontiers were taxed with their defence, for which they were obliged to keep regiments on foot; and as they were but ſcantily indemnified by the ſtate, it ſometimes required the exertion of authority to make them keep up their levies. When the frontiers, by the conqueſt of Caſan, were far extended, thoſe gentleman found the regiments no longer burdenſome, becauſe by the help of falſe muſters, the former ſcanty allowance much more than reimburſed them for the expence of the eſtabliſhment. The conſequence was, that diſputes aroſe from them about the right of guarding certain diſtricts, and it became neceſſary to ſettle their reſpective claims. These were tedious and intricate. One claimant ſhowed the order of the court, iſſued a century or two back, to his anceſtor for the marching of his men, as a proof that the right was then in his family. His opponent proved, that his anceſtors had been the real lords of the marches; but that, on account of their negligence, the court had iſſued an *emanoy ukaſe* to the other, only at that particular period. The emperor ordered all the family archives to be brought to Moſcow, and all documents on both ſides to be collected. A time was ſet for the examination; a fine wooden court-houſe was built; every paper was lodged under a good guard; the day was appointed when the court ſhould be opened and the claims heard; but that morning the houſe, with all its contents, was in two hours conſumed by fire. The emperor then ſaid, "Gentlemen, henceforward your ranks, your privileges, and your courts, are the nation's, and the nation will guard itſelf. Your archives are unfortunately loſt, but thoſe of the nation remain. I am the keeper, and it is my duty to adminiſter juſtice for all and to all. Your ranks are not private, but national; attached to the ſervices you are actually performing. Henceforward Colonel Buturlin (a private gentleman) ranks before Captain Viazemſky (an old prince)."

54 Alexis's conſtitution with reſpect to ranks ſtill remains Ruſſia.

This conſtitution, which eſtabliſhed the different ranks of Ruſſia as they remain to this day, is by Voltaire aſcribed to Peter: but it was the work of Alexis; who, when the ſituation of himſelf and his country is conſidered, muſt be allowed to have been a great and a good man. He died in 1676, and was ſucceeded by his ſon Theodore Alexiovitz; who after an excellent reign, during the whole of which he exerted himſelf to the utmoſt for the good of his ſubjects, died in 1682, having appointed his brother Peter I. commonly called *Peter the Great*, his ſucceſſor. See Peter I.

55 Acceſſion of Peter the Great.

Theodore had another brother named *John;* but as he was ſubject to the falling-ſickneſs, the Czar had preferred Peter, though very young, to the ſucceſſion. But through the intrigues, of the princeſs Sophia, ſiſter to Theodore, a ſtrong party was formed in favour of John; and ſoon after both John and Peter were proclaimed ſovereigns of Ruſſia under the adminiſtration of Sophia herſelf, who was declared regent. However, this adminiſtration did not continue long; for the princeſs regent having conſpired againſt Peter, and having the misfortune to be diſcovered, was confined for life in a convent. From this time alſo John continued to be only a nominal ſovereign till his death, which happened in 1696, Peter continuing to engroſs all the power.

56 His character.

It is to this emperor that Ruſſia is univerſally allowed to owe the whole of her preſent greatneſs. The private character of Peter himſelf ſeems to have been but very indifferent. Though he had been married in his eighteenth year to a young and beautiful princeſs, he was not ſufficiently reſtrained by the ſolemn ties of wedlock; and he was beſides ſo much addicted to feaſting and drunkenneſs, the prevailing vice of his country, that nobody could have imagined him capable of effecting the reformation upon his ſubjects which he actually accompliſhed. In ſpite of all diſadvantages, however, he

Ruſſia. He applied himſelf to the military art and to civil government. He had alſo a very ſingular natural defect, which, had it not been conquered, would have rendered him for ever incapable of accompliſhing what he afterwards did. This was a vehement dread of water; which is thus accounted for. When he was about five years of age, his mother went with him in a coach, in the ſpring-ſeaſon; and paſſing over a dam where there was a conſiderable water-fall, whilſt he lay aſleep in her lap, he was ſo ſuddenly awaked and frightened by the ruſhing of the water, that it brought a fever upon him; and after his recovery he retained ſuch a dread of that element, that he could not bear to ſee any ſtanding water, much leſs to hear a running ſtream. This averſion, however, he conquered by jumping into water; and afterwards became very fond of that element.

57 He removes the defects of his education;

Being aſhamed of the ignorance in which he had been brought up, he learned almoſt of himſelf, and without a maſter, enough of the High and Low Dutch languages to ſpeak and write intelligibly in both. He looked upon the Germans and Hollanders as the moſt civilized nations; becauſe the former had already erected ſome of thoſe arts and manufactures in Moſcow, which he was deſirous of ſpreading throughout his empire; and the latter excelled in the art of navigation, which he conſidered as more neceſſary than any other. During the adminiſtration of the princeſs Sophia, he had formed a deſign of eſtabliſhing a maritime power in Ruſſia; which he accompliſhed by the means which we have recorded in his life.

58 And is ſucceſsful in an expedition againſt the Turks.

Having reformed his army, and introduced new diſcipline among them, he led his troops againſt the Turks; from whom, in 1696, he took the fortreſs of Azov, and had the ſatisfaction to ſee his fleet defeat that of the enemy. On his return to Moſcow were ſtruck the firſt medals which had ever appeared in Ruſſia. The legend was, "PETER THE FIRST, *the auguſt emperor of Ruſſia.*" On the reverſe was Azov, with theſe words, *Victorious by fire and water.* Notwithſtanding this ſucceſs, however, Peter was very much chagrined at having his ſhips all built by foreigners; having beſides as great an inclination to have an harbour on the Baltic as on the Euxine Sea. Theſe conſiderations determined him to ſend ſome of the young nobility of his empire into foreign countries, where they might improve. In 1697 he ſent 60 young Ruſſians into Italy; moſt of them to Venice, and the reſt of Leghorn, in order to learn the method of conſtructing their galleys. Forty more were ſent out by his direction for Holland, with an intent to inſtruct themſelves in the art of building and working large ſhips: others were appointed for Germany, to ſerve in the land-forces, and to learn the military diſcipline of that nation. At laſt he reſolved to travel through different countries in perſon, that he might have the opportunity of profiting by his own obſervation and experience. Of this journey we have given a ſhort account elſewhere; and ſhall here only add, that in executing his great deſign, he lived and worked like a common carpenter. He laboured hard at the forges, rope-yards, and at the ſeveral mills for the ſawing of timber, manufacturing of paper, wire-drawing, &c. In acquiring the art of a carpenter, he began with purchaſing a boat, to which he made a maſt himſelf, and by degrees he executed every part of the conſtruction of a ſhip.

59 Sends ſome young noblemen into foreign countries;

60 And makes the tour of Europe himſelf.

Beſides this, Peter frequently went from Sweden to Amſterdam, where he attended the lectures of the celebrated Ruyſch on anatomy. He alſo attended the lectures of burgomaſter Witſen on natural philoſophy. From this place he went for a few days to Utrecht, in order to pay a viſit to King William III. of England; and on his return ſent to Archangel a 60 gun ſhip, in the building of which he had aſſiſted with his own hands. In 1698 he went over to England, where he employed himſelf in the ſame manner as he had done in Holland. Here he perfected himſelf in the art of ſhip-building; and having engaged a great number of artificers, he returned with them to Holland; from whence he ſet out for Vienna, where he paid a viſit to the emperor; and was on the point of ſetting out for Venice to finiſh his improvements, when he was informed of a rebellion having broken out in his dominions. This was occaſioned by the ſuperſtition and obſtinacy of the Ruſſians, who having an almoſt invincible attachment to their old ignorance and barbariſm, had reſolved to dethrone the Czar on account of his innovations. But Peter arriving unexpectedly at Moſcow, quickly put an end to their machinations, and took a moſt ſevere revenge on thoſe who had been guilty. Having then made great reformations in every part of his empire, in 1700 he entered into a league with the kings of Denmark and Poland againſt Charles XII. of Sweden. The particulars of this famous war are related under the article SWEDEN. Here we ſhall only obſerve, that, from the concluſion of this war, Sweden ceaſed not only to be a formidable enemy to Ruſſia, but even loſt its political conſequence in a great meaſure altogether.

Ruſſia.

61 Is obliged by a rebellion to return to his own dominions.

62 His war with Sweden.

Peter applied himſelf to the cultivation of commerce, arts, and ſciences, with equal aſſiduity as to the purſuits of war; and he made ſuch acquiſitions of dominion even in Europe itſelf, that he may be ſaid, at the time of his death, to have been the moſt powerful prince of his age. He was unfortunate in the Czarovitz his eldeſt ſon, whom he contrived to get rid of by the forms of juſtice (ſee PETER I. note B), and then ordered his wife Catharine to be crowned with the ſame magnificent ceremonies as if ſhe had been a Greek empreſs, and to be recogniſed as his ſucceſſor; which ſhe accordingly was, and mounted the Ruſſian throne upon the deceaſe of her huſband. She died, after a glorious reign, in 1727, and was ſucceeded by Peter II. a minor, ſon to the Czarovitz. Many domeſtic revolutions happened in Ruſſia during the ſhort reign of this prince; but none was more remarkable than the diſgrace and exile of Prince Menzikoff, the favourite general in the two late reigns, and eſteemed the richeſt ſubject in Europe. Peter died of the ſmall pox in 1740.

63 His aſſiduous ſpirit of improvement.

64 He ſettles the crown on his wife Catharine I.

Notwithſtanding the deſpotiſm of Peter the Great and his wife, the Ruſſian ſenate and nobility, upon the death of Peter II. ventured to ſet aſide the order of ſucceſſion which they had eſtabliſhed. The male iſſue of Peter was now extinguiſhed; and the duke of Holſtein, ſon to his eldeſt daughter, was by the deſtination of the late empreſs intitled to the crown: but the Ruſſians, for political reaſons, filled their throne with Anne ducheſs of Courland, ſecond daughter to John, Peter's eldeſt brother; though her eldeſt ſiſter the ducheſs of Mecklenburgh was alive. Her reign was extremely proſperous; and though ſhe accepted of the crown under

65 Anne ducheſs of Courland called to the throne.

Ruſſia.

der limitations that ſome thought derogatory to her dignity, yet ſhe broke them all, aſſerted the prerogative of her anceſtors, and puniſhed the aſpiring Dolgorucki family, who had impoſed upon her limitations, with a view, as it is ſaid, that they themſelves might govern. She raiſe her favourate Biron to the duchy of Courland; and was obliged to give way to many ſevere executions on his account. Upon her death in 1740, John, the ſon of her niece the princeſs of Mecklenburgh, by Antony Ulric of Brunſwic Wolfenbuttel, was, by her will, intitled to the ſucceſſion: but being no more than two years old, Biron was appointed to be adminiſtrator of the empire during his nonage. This deſtination was diſagreeable to the princeſs of Mecklenburgh and her huſband, and unpopular among the Ruſſians. Count Munich was employed by the princeſs of Mecklenburgh to arreſt Biron; who was tried, and condemned to die, but was ſent in exile to Siberia.

66 Elizabeth daughter of Peter I obtains the crown.

The adminiſtration of the princeſs Anne of Mecklenburgh and her huſband was, upon many accounts, but particularly that of her German connections, diſagreeable not only to the Ruſſians, but to other powers of Europe; and notwithſtanding a proſperous war they carried on with the Swedes, the princeſs Elizabeth, daughter by Catharine to Peter the Great, formed ſuch a party, that in one night's time ſhe was declared and proclaimed empreſs of the Ruſſias; and the princeſs of Mecklenburgh, her huſband, and ſon, were made priſoners.

67 Her reign uncommonly glorious.

Elizabeth's reign may be ſaid to have been more glorious than that of any of her predeceſſors, her father excepted. She aboliſhed capital puniſhments, and introduced into all civil and military proceedings a moderation till her time unknown in Ruſſia: but at the ſame time ſhe puniſhed the counts Munich and Oſterman, who had the chief management of affairs during the late adminiſtration, with exile. She made peace with Sweden; and ſettled the ſucceſſion to that crown, as well as to her own dominions, upon the moſt equitable foundation. Having glorioufly finiſhed a war, which had been ſtirred up againſt her with Sweden, ſhe replaced the natural order of ſucceſſion in her own family, by declaring the duke of Holſtein-Gottorp, who was deſcended from her elder ſiſter, to be her heir. She gave him the title of grand duke of Ruſſia; and ſoon after her acceſſion to the throne; ſhe called him to her court; where he renounced the ſucceſſion to the crown of Sweden, which undoubtedly belonged to him, embraced the Greek religion, and married a princeſs of Anhalt Zerbt, by whom he had a ſon, who is now heir to the Ruſſian empire.

Few princes have had a more uninterrupted career of glory than Elizabeth. She was completely victorious over the Swedes. Her alliance was courted by Great Britain at the expence of a large ſubſidy; but many political, and ſome private reaſons, it is ſaid, determined her to take part with the houſe of Auſtria againſt the king of Pruſſia in 1756. Her arms alone gave a turn to the ſucceſs of the war, which was in diſfavour of Pruſſia, notwithſtanding that monarch's amazing abilities both in the field and cabinet. Her conquests were ſuch as portended the entire deſtruction of the Pruſſian power, which was perhaps ſaved only by her critical death on January 5. 1762.

Elizabeth was ſucceeded by Peter III. grand prince of Ruſſia and duke of Holſtein; a prince whoſe conduct has been variouſly repreſented. He mounted the throne poſſeſſed of an enthuſiaſtic admiration of his Pruſſian majeſty's virtues; to whom he gave peace, and whoſe principles and practices he ſeems to have adopted as the directories of his future reign. He might have ſurmounted the effects even of thoſe peculiarities, unpopular as they then were in Ruſſia; but it is ſaid, that he aimed at reformations in his dominions, which even Peter the Great durſt not attempt; and that he even ventured to cut off the beards of his clergy. He was certainly a weak man, who had no opinions of his own, but childiſhly adopted the ſentiments of any perſon who took the trouble to teach him. His chief amuſement was buffoonery; and he would ſit for hours looking with pleaſure at a merry-andrew ſinging drunken and vulgar ſongs. He was a ſtranger to the [illegible] inhabitants, and their manners; and ſuffered himſelf to be perſuaded by thoſe about him, that the Ruſſians were fools and beaſts unworthy of his attention, except to make them, by means of the Pruſſian diſcipline, good fighting machines. Theſe ſentiments regulated his whole conduct, and prepared the way for that revolution which improprieties of a different kind tended to haſten.

Ruſſia.

68 Character of her ſucceſſor Peter III.

69 Behaviour of the empreſs and princeſs Daſhkoff.

Becoming attached to one of the Vorontzoff ladies, ſiſter to the princeſs Daſhkoff, he diſguſted his wife, who was then a lovely woman in the prime of life, of great natural talents and great acquired accompliſhments; whilſt the lady whom he preferred to her was but one degree above an idiot. The princeſs Daſhkoff, who was married to a man whoſe genius was not ſuperior to that of the emperor, being *dame d'honneur* and lady of the bed-chamber, had of courſe much of the empreſs's company. Similarity of ſituations knit theſe two illuſtrious perſonages in the cloſeſt friendſhip. The princeſs being a zealous admirer of the French *œconomiſtes*, could make her converſation both amuſing and inſtructive. She retailed all her ſtatiſtical knowledge; and finding the empreſs a willing hearer, ſhe ſpoke of her in every company as a prodigy of knowledge, judgment, and philanthropy. Whilſt the emperor, by his buffoonery and attachment to foreign manners, was daily incurring more and more the odium of his ſubjects, the popularity of his wife was rapidly increaſing; and ſome perſons about the court expreſſed their regret, that ſo much knowledge of government, ſuch love of humanity, and ſuch ardent wiſhes for the proſperity of Ruſſia, ſhould only furniſh converſations with Catharina Romanovna *. The empreſs and her favourite did not let theſe expreſſions paſs unobſerved: they continued their ſtudies in concert; and whilſt the former was employed on her famous code of laws for a great empire, the latter always reported progreſs, till the middling circles of Moſcow and St Peterſburgh began to ſpeak familiarly of the bleſſings which they might enjoy if theſe ſpeculations could be realized.

* The Princeſs Daſhkoff.

Meanwhile Peter III. was giving freſh cauſe of diſcontent. He had recalled from Siberia count Munich, who was indeed a ſenſible, brave, and worthy man; but as he was ſmarting under the effects of Ruſſian deſpotiſm, and had grounds of reſentment againſt moſt of the great families, he did not much diſcourage the emperor's unpopular conduct, but only tried to moderate it and give it a ſyſtem. Peter, however, was impatient.

70 Peter's unpopular conduct at length diſguſts the miniſtry.

He

Russia.

He publicly ridiculed the exercise and evolutions of the Russian troops; and hastily adopting the Prussian discipline, without digesting and fitting it for the constitution of his own forces, he completely ruined himself by disgusting the army.

71 They are easily gained over to the party of Catharine,

What he lost was soon and easily gained by the emissaries of Catharine. Four regiments of guards, amounting to 8000 men, were instantly brought over by the three brothers Orloff, who had contrived to ingratiate themselves with their officers. The people at large were in a state of indifference, out of which they were roused by the following means. A little manuscript was handed about, containing principles of legislation for Russia, founded on natural rights, and on the claims of the different classes of people which had insensibly been formed, and become so familiar as to appear natural. In that performance was proposed a convention of deputies from all the classes, and from every part of the empire to converse, but without authority, on the subjects of which it treated, and to inform the senate of the result of their deliberations. It passed for the work of her majesty, and was much admired.

72 Who then stood high in the public estimation.

While Catharine was thus high in the public esteem and affection, the emperor took the alarm at her popularity, and in a few days came to the resolution of confining her for life, and then of marrying his favourite. The servants of that favourite betrayed her to her sister, who imparted the intelligence to the empress. Catharine saw her danger, and instantly formed her resolution. She must either tamely submit to perpetual imprisonment, and perhaps a cruel and ignominious death, or contrive to hurl her husband from his throne. No other alternative was left her; and the consequence was what undoubtedly was expected. The proper steps were taken; folly fell before abilities and address, and in three days the revolution was accomplished.

73 A revolution in her favour quickly accomplished.

When the emperor saw that all was lost, he attempted to enter Cronstadt from Oranienbaum, a town on the gulph of Finland, 39 versts, or near 26 miles from Petersburg. The sentinels at the harbour presented their muskets at the barge; and though they were not loaded, and the men had no cartridges, he drew back. The English sailors called from ship to ship for some person to head them, declaring that they would take him in and defend him; but he precipitately withdrew. Munich received him again at Oranienbaum, and exhorted him to mount his horse and head his guards, swearing to live and die with him. He said, "No: I see it cannot be done without shedding much of the blood of my brave Holstenians. I am not worthy of the sacrifice." The revolution was settled, and Catharine declared *autocratrix*. The crown was said to be pressed upon her, and her son was proclaimed *her* heir, and *as such* great duke of all the Russias.

74 Her magnanimous and moderate behaviour.

She behaved with magnanimity and moderation; retained Munich; even pardoned countess Vorontzoff the emperor's favourite; and afterwards, on her marriage with Mr Paulotsky, made a handsome settlement on them. She allowed the expectations of golden days and a philosophical government to become the subject of fashionable conversation; and the princess Dashkoff (c) was completely happy. The convention of deputies was even resolved on; and as they were not to be elected by the people, except here and there for the show, Prince Galitzin and Count Panin, whom she had completely gained over, and who had the greatest abilities of any Russians about court, were at immense pains in appointing a proper set. In the mean time, a great number of showy patriotic projects were begun. A grave English clergyman was invited over to superintend the institution of schools for civil and moral education; and the empress was most liberal in her appointments. This institution failed, however, to produce the effects expected from it. The clergyman appointed, though a most excellent character and real philanthropist, had views too contracted for the sphere in which he was placed; and Mr Betskoy, the Russian *Mecænas*, to whom the empress referred him for instructions, preferred declamation, and stage-playing, and ballets, to all other accomplishments.

79 She institutes schools.

76 And sends the nobles a traveling.

In the mean time, elegance of all kinds was introduced before the people were taught the principles of morals. The nobles were sent a travelling; and as the Russians more easily acquire foreign languages than the people of most other nations, have great vivacity without flippancy, and in general understand play, these travellers were everywhere well received, especially at Paris, where reasons of state contributed not a little to procure to them that attention with which they were treated. They were ravished with the manners of foreign courts, and imported fashions and fineries without bounds. The sovereign turned all this to her own account, by encouraging a dissipation which rendered court favours necessary, and made the people about her forget their Utopian dreams.

77 Convention of deputies assembled, and the issue.

The convention of deputies at last assembled in the capital. The empress's book of instructions (D) came forth; and by some great things were doubtless expected. The most consequential of the deputies were privately instructed to be very cautious, and informed that carriages and guards were ready for Siberia. There was a grand procession at their presentation. Each had the honour of kissing her majesty's hand and receiving a gold medal. They met in form to recognise one another,

(c) This lady, during the progress of the revolution, certainly acted either from the most disinterested patriotism or the most generous friendship. She might have taken part with the emperor, and directed the counsels of the empire; for her sister, on whom he doated, acknowledged her superiority, and wanted nothing but pleasure. Between them they could easily have governed such a man as Peter III. But Catharine Romanovna was a theoretical enthusiast, who loved the empress because she thought her a philosopher and philanthropist; and perhaps she might entertain hopes of directing the conduct of Catharine II. as she had formerly assisted her in her patriotic studies.

(D) It is intitled, *Instructions for the Deputies to consult about a New Code of Laws*, &c. and is a very respectable work, which does honour to the empress, by whom it was undoubtedly composed.

Ruſſia.

other, then parted, and have never met ſince. The thing melted away without notice; and the princeſs Dathkoff was handſomely given to underſtand, that her counſels were no longer neceſſary, and that ſhe could not do better than take the amuſements of the tour of Europe. She was liberally ſupplied, and has ever ſince been treated with great kindneſs, but kept amuſed with ſomething very different from legiſlation.

78 Patriotic endeavours of the empreſs.

In the mean time, many patriotic things were really done. Taxes were frequently remitted where they were burthenſome. Every perſon was declared free who had ſerved government without pay for two years. No man was allowed to ſend boors from his cultivated eſtates to his mines in Siberia, nor to any diſtant eſtates, but for the purpoſes of agriculture. Many colonies of German peaſants were in various places ſettled on the crown-lands, to teach the natives the management of the dairy; a branch of rural economy of which the Ruſſians were till that period ſo completely ignorant, that there is not in their language an appropriated word for *butter*, or *cheeſe*, or even for *cream*.

The Ruſſians hoped to be likewiſe inſtructed in agriculture; but the coloniſts were poor and ignorant; and this part of the project came to nothing, like the great national ſchools. Other improvements however took place in favour of commerce; for all barriers were removed, and goods ſuffered to paſs through the empire duty-free. The empreſs with great liberality encouraged the introduction of arts and manufactures. An academy was inſtituted of ſculpture, painting, and architecture, &c. a magnificent and elegant building was erected for it, and many éleves ſupported in it at the expence of the crown. Several very promiſing youths have been educated in that academy; but as the Ruſſians are childiſhly fond of finery, and cannot be perſuaded that any thing fine was ever done by their own countrymen, the ſtudents are all, on leaving the academy, ſuffered to ſtarve.

79 Her taſte for architecture,

The empreſs, who has a very juſt taſte in architecture, has herſelf deſigned ſeveral buildings equally uſeful and ornamental to her capital (ſee Neva and Petersburgh); and while ſhe has thus diligently cultivated the arts of peace, ſhe has not neglected thoſe of war. She put her fleets on the moſt reſpectable footing, and procured a number of Britiſh officers to inſtruct her ſeamen in the ſcience of naval tactics. By land, her ſucceſſes againſt the Turks, the Swedes, and the Poles (ſee Turkey, Sweden, and Poland), compel us to believe, that her troops are better diſciplined, and her generals more ſkilful, than any whom the greateſt of her predeceſſors could bring into the field; and perhaps it is not too much to ſay, that the empire of Ruſſia, though the people are but juſt emerging from a ſtate of barbarism, is at this day the moſt powerful in Europe.

80 And ſucceſs in war.

81 Natural diviſion of Ruſſia.

Ruſſia is divided into two great parts by a range of mountains called *Oural*, or the *Belt*, which, through the whole breadth of it, form one continual uninterupted barrier, dividing Siberia from the remaining Ruſſia.—That part of Ruſſia which lies on this ſide of the Oural mountains preſents a very extenſive plain verging weſtward by an eaſy deſcent. The vaſt extent of this plain has a great variety of different climates, ſoils, and products. The northern part of it is very woody, marſhy, and but little fit for cultivation, and has a ſenſible declivity towards the White and the Frozen Seas. The other part of this vaſt plain includes the whole extent along the river Volga as far as the deſerts, extending by the Caſpian and the Azov Seas, and conſtitutes the fineſt part of Ruſſia, which in general is very rich and fruitful, having more arable and meadow land than wood, marſhes, or barren deſerts.

Ruſſia

The part lying on the other ſide of the Oural mountains, known by the name of Siberia, is a flat tract of land of conſiderable extent, declining imperceptibly towards the Glacial Sea, and equally by imperceptible degrees riſing towards the ſouth, where at laſt it forms a great range of mountains, conſtituting the boders of Ruſſia on the ſide of China. Between the rivers Irtiſh Obè, and the Altay mountains, there is a very extenſive plain, known by the name of *Barabinſkaya Stepe*, viz. the deſerts of Baraba, the northern part of which is excellent for agriculture; but the ſouthern part, on the contrary, is a deſert full of ſands and marſhes, and very unfit for cultivation. Between the rivers Obè and Eniſſey there is more woodland than open ground; and the other ſide of the Eniſſey is entirely covered with impervious woods, as far as the lake Baical; but the ſoil is fruitful everywhere; and wherever the trouble has been taken of clearing it of the wood, and of draining it from unneceſſary water, it proves to be very rich, and fit for cultivation; and the country beyond the Baical is ſurrounded by ridges of high ſtony mountains. Proceeding on farther towards the eaſt, the climate of Siberia becomes by degrees more and more ſevere, the ſummer grows ſhorter, the winter longer, and the froſts prove more intenſe.

82 Variety of climates.

With reſpect to the variety of climates, as well as the produce of the earth, Ruſſia naturally may be divided into three regions or diviſions, viz. into the northern, middle, and ſouthern diviſions.

Theſe were about 20 years ago ſubdivided into different governments, for the better adminiſtration of juſtice.

The northern diviſion, beginning from the 57th degree of latitude, extends to the end of the Ruſſian dominions on the north, and includes the governments of St Peterſburgh, Riga, Revel, Vyborg, Pſkov, Novogorod, Tver, Olonetz, Archangel, Vologda, Yaroſlavl, Koſtroma, Viatka, Perme, and Tobolſk. The middle diviſion is reckoned from the 57th to the 50th degree of latitude, and includes the governments of Moſcow, Smolenſk, Polotſk, Moghilev, Tchernigov, Novogorod-Sieverſkoy, Kharkov, Voronez, Kourſk, Orel, Kalouga, Toola, Riazane, Vladimir, Niznei-Novogorod, Tambov, Saratow, Penza, Simbirſk, Kazane, Oufa, Kolhivane and Irkoutſk. The ſouthern diviſion begins at the 50th degree of latitude, and extends to the end of Ruſſia on the ſouth, including the governments of Kiev, Ekatherinoſlav, Caucaſus, and the province of Taurida. To this may be added the habitations of the Coſſacs of the Don.

83 Products of the northern, middle, and ſouthern diviſions.

The northern diviſion, though deficient in grain, fruit and garden vegetables, has the preference before the other two in the abundance of animals, rare and valuable for their ſkins; in mines of particular ſorts, very uſeful for different purpoſes of life; in cattle, and metals of inferior kinds, &c. The middle diviſion of Ruſſia abounds in different kinds of grain, hemp, flax, cattle,

Smirnove's Survey of the Ruſſian empire.

Ruſſia. cattle, fiſh, bees, timber proper for every uſe, different kinds of wild beaſts, metals, both of ſuperior as well as of inferior kind, different precious ſtones, &c. This diviſion is likewiſe moſt convenient for the habitation of mankind, on account of the temperature and pleaſantneſs of the air. The ſouth diviſion has not that abundance of grain, but has the preference in different delicate kinds of fruit, quantity of fiſh, cattle, and wild animals, amongſt which there are ſeveral ſpecies different from thoſe which are found in the middle diviſion. It exceeds greatly both the other diviſions in plants and roots fit for dying and for medical purpoſes, as well as for the table; neither is it deprived of precious ſtones, as well as different metals.

The products of theſe three diviſions conſtitute the permament and inexhauſtible riches of Ruſſia; for, beſides what is neceſſary for home conſumption, there is a great quantity of thoſe products exported yearly into foreign countries to the amount of ſeveral millions of rubles. Theſe productions are brought from different places to fairs, eſtabliſhed in different parts of Ruſſia, where the merchants buy them up, and forward them to different ports, and other trading towns, for exportation into foreign kingdoms. Theſe fairs are likewiſe the places where a conſiderable quantity of goods imported from foreign kingdoms is diſpoſed of. The principal yarmankas, that is, fairs, are the yarmanka Makarievſkaya, Korennaya, and Irbitſkaya.

84 External commerce of Ruſſia

The external commerce of Ruſſia may be divided into two different branches; 1ſt. The commerce with the European nations, which is carried on by buying and ſelling goods either for ready money or upon credit. 2d. The commerce with the Aſiatic nations, which is conducted by barter or exchange of goods.

The principal ports belonging to the firſt part of Ruſſia are on the Baltic ſea, St Peterſburgh, Riga, Vyborg, Revel, Narva, Frederickſham, and the Baltic port; Archangel on the White ſea, and Cola on the Northern Ocean; Taganrog on the ſea of Azov; Kherſon, Sevaſtopole, Balaklava, Soudak, Theodoſia, Kerche, and Phanagoria on the Black ſea, beſides others of ſmaller note. In theſe ports commerce is carried on, as well as in ſeveral trading towns ſituated on the frontiers of Poland, Sweden, and Turkey.

85 With Europe.

The products of Ruſſia exported into the different European kingdoms conſiſt chiefly in hemp, flax, different kinds of grain, tallow, hides, ſail-cloth, iron, timber, linſeed, butter, hemp-oil, train-oil, wax, potaſhes, tar, tobacco, briſtles, linens, peltry, and other goods, the greateſt part of which is exported chiefly by way of St Peterſburgh, Riga, and Archangel; and in return from the European kingdoms they receive woollen cloths, different kinds of goods made of worſted, ſilk, cotton, and thread; wines and beer, white and moiſt ſugars, ſilks, cotton unwrought, and yarn; French brandy, liquors, arrack, ſhrub, different iron tools, and toys; gold and ſilver in bars, in foreign money, and in other things; brilliants, pearls, galanterie goods, coffee, colours; peltry, viz. beaver and otter ſkins; herrings, ſtock-fiſh, ſalt, tobacco, different trees, oil, horſes, china and earthen ware, &c. The greateſt part of theſe goods is imported through the ports of St Peterſburgh and Riga, but a conſiderable quantity is likewiſe admitted by land through different frontier cuſtom-houſes.

The principal goods exported into Aſia are partly the products of Ruſſia, and partly imported from other European kingdoms, and conſiſt of peltry and hides. The other goods are woollen cloths, bays, borax, bottles, printed linens, iron, and differents kinds of iron-ware, calamancos, kerſeys, glue, iſinglaſs, cochineal, indigo, laura, tinſel, gold and ſilver lace, ſoap; all kinds of arms, as piſtols, guns, ſabres; different kinds of linens, printed and glazed, ſtriped linen, ticking, pallock, crath, &c. From the Aſiatic kingdoms they import different ſilk goods, raw ſilk, cotton, ſilk-waſte ſtuffs, gold and ſilver in bars and in coin, cattle, horſes, &c. Ruſſia. 86 And Aſia.

87 Mountains, &c.

The mountains within Ruſſia, as well as thoſe on its frontiers, abound with minerals of various kinds. Gold ſilver, quickſilver, copper, lead, iron-ore, very powerful loadſtones, mountain-cryſtal, amethyſt, topazes of different ſorts, agates, cornelian, beryl, chalcedony, onyx, porphyry, antimony, pyrites, aquamarines, chryſolites, ophites, and lapis lazuli, are found in them, beſides marble, granite, trappe, maria or Muſcovy glaſs, of remarkable ſize and clearneſs, baſaltes, and coal, &c; and in every part of Siberia, but particularly in the plains of it, are found bones of animals uncommonly large, mammoth's teeth (ſee MAMMOTH), and other foſſils.

88 Lakes.

In the Ruſſian empire are many lakes of very large extent. 1. The Ladoga, anciently called *Neva*, is the largeſt lake in Europe, extending in length 175 and in breath 105 verſts; or it is 116 Engliſh miles long and near 70 broad. It lies between the governments of St Peterſburgh, Olonetz, and Vyborg; and communicates with the Baltic ſea by the river Neva, with the Onega lake by the river Svir, and with the Ilmen lake by the river Volkov. Several conſiderable rivers fall into it, as the Paſha, Sias, Oyat, and others. The Ladoga canal is made near this lake. 2. The Onega lake is ſituated in the government of Olonetz. It is above 200 verſts long, and the greateſt width of it does not exceed 80 verſts. 3. The Tchude lake, or Peipus, lies between the governments of St Peterſburgh, Pſcov, Revel, and Riga. It is near 80 verſts long and 60 broad. It joins to the lake of Pſcov by a large neck of water. The length of this lake is 50 and the width about 40 verſts. The River Velikaya flows into it. The river Narova comes out of the lake Peipus, which by the river Embakha communicates with the lake Wirtz-Erve, and from this latter flows the river Fellin, and runs into the bay of Riga. 4. The Ilmen lake, anciently called *Maiſk*, lies in the government of Novogorod. Its length is 40 and width 30 verſts. The rivers Miſta, Lovate, Shelone, and others, fall into it; and only one river Volkov, runs out of it, by which it is joined with the Ladoga lake. 5. The Bielo-Ozero, that is, the White Lake, lies in the government of Novogorod. It extends 50 verſts in length, and about 30 in width. There are many ſmall rivers which run into it; but only one river, Shekſna, comes out of it, and falls into the river Volga. 6. The Altin, or Altay lake, otherwiſe called the *Teletſk Lake*, is ſituated in the government of Kolhivane. It extends in length 126 and in width about 84 verſts. The river Biya comes out of it, which being joined to the river Katounya, conſtitute the river Obè. 7. The Baical Lake, otherwiſe called the *Baical Sea*, and the *Holy Sea*, lies in the government of Irkoutſk. Its extent in length is 600, and in width from

Ruſſia. 30 to 50 verſts, and in the wideſt places as far as 70 verſts. 8. The Tchani Lake lies in the deſerts of Baraba, between the rivers Obè and Irtiſh. It joins with a great many ſmaller lakes, occupies a vaſt tract of land, and abounds very much in fiſh. 9. Between the Gulf of Finland and the White Sea there are ſeveral lakes which extend from 50 to 70 verſts in length; and beſides theſe there are many other ſalt lakes in different parts of Ruſſia, ſuch as the Ozero, that is, the lake Eltonſkoye, Bogdo, Inderſkoye, Ebele, Koryakovſkoye, Yamiſhevſkoye, Borovye, and others; and the ſalt which is got from them ſerves for the uſe of the greateſt part of the empire. To theſe may be added the Caſpian, which, though called a ſea, is more properly a lake, as it has no communication with the ocean either viſible or ſubterraneous. See *Caspian-Sea*, and Pneumatics, n° 277.

89 Rivers. Ruſſia boaſts likewiſe of a conſiderable number of large and famous rivers. Of the Dvina or Dwina, the Neva, Dneiper of Neiper, the Don, the Volga, the Irtis, the Onega, the Oby, and the Lena, the reader of this work will find ſome account under their reſpective names; but in this vaſt empire there are many other rivers worthy of notice, tho' not perhaps of ſuch minute deſcription. Among theſe the *Boug*, or, as it is ſometimes written, *Beg*, riſes in Poland; then directing its courſe to the ſouth-eaſt, it divides the government of Ecatherinoſlav from the deſerts of Otchakov, now belonging to Ruſſia, and falls into the Liman, which communicates with the Black Sea.

The Kubane conſiſts of many ſprings or rivulets running out of the Caucaſian mountains, and divides itſelf into two branches, the one of which falls into the Azov Sea, and the other into the Black ſea. This river, from its ſource to the end of it, conſtitutes the frontier of Ruſſia.

The Oural, formerly Yaik, takes its riſe in the Oural mountains, in the government of Oufa, which it divides from that of Caucaſus, and extends its courſe about 3000 verſts. It receives many rivers, the principal of which are the Or, Sakmara, Yleck, and Terkool.—The Kouma riſes in the Caucaſian mountains, and runs through the plains between Terek and Volga, and at laſt loſes itſelf in the ſands, before it comes to the Caſpian ſea. The Terek originates in the Caucaſian mountains, runs between them, and then coming out, extends its courſe to the Caſpian Sea, and receives ſeveral rivers, as the Malka, Soonja, Bakſan, and Acksay.

The Bolſhaya Petchora, that is, the great Petchora, riſes in the Oural mountains, in the government of Vologda, runs acroſs the whole breadth of the government of Archangel, and falls into the Icy ſea. It receives in its courſe ſeveral rivers, the principal of which are the Outcha and the Elma. The Eniſſey is formed by the junction of two rivers, the Oulookema and the Baykema, which riſe in the Altay mountains in Mungalia. It runs through the whole extent of Siberia, and falls into the Icy ſea. The extent of the Eniſſey is about 2500 verſts. It receives in its courſe ſeveral rivers, the principal of which are the Abakan, Elogooy, Podkamennaya Tungouſka, Niznyaya Tungouſka, and Tourookhan. The Yana, the Indighirka, and the Kolhima, are likewiſe no inconſiderable rivers in the government of Irkoutsk. The firſt riſes in the mountains which overſhadow the banks of the river Lena on the right hand, and extends its courſe 800 verſts. The two laſt take their ſources in the mountains which extend on the coaſts of the Eaſtern ſea. The length of the Indighirka is 1200 and that of Kolhima 1500 verſts.—The laſt, near its mouth, is divided into two branches, and receives the rivers Omolon and Onooy. The Anadir is the eaſternmoſt of all the rivers in Siberia. It riſes out of the lake Ioanko, in the diſtrict of Okhotſk, and runs through the eaſtern part of it, and then falls into the Eaſtern ocean. The Amour is formed by the junction of two conſiderable rivers, the Shilka and Argoonya, which are joined juſt by the frontiers of China. It runs through the Chineſe dominions, and at laſt falls into the Eaſtern ocean. The Kamtſchatka runs through the peninſula of the ſame name, extending its courſe from the Verkhney to Nizney Oſtrog, that is, from the upper to the lower fort, and falls into the Eaſtern ocean. The Penjina riſes in the Yablonnoy ridge of mountains, and falls into the Penjinſkaya Gooba, that is, the gulph or the ſea of Penjina.

90 State of the weather. In ſuch a vaſt extent of country, ſtretching from the temperate ſo far into the frigid zone, the climate muſt vary conſiderably in different places. In the ſouthern parts of the Ruſſian empire, the longeſt day does not exceed fifteen hours and a half; whereas in the moſt northern, the ſun in ſummer is ſeen two months above the horizon. The country in general, though lying under different climates, is exceſſively cold in the winter. Towards the north, the country is covered near three quarters of the year with ſnow and ice; and by the ſeverity of the cold many unfortunate perſons are maimed, or periſh. This ſort of weather commonly ſets in about the latter end of Auguſt, and continues till the month of May; in which interval the rivers are frozen to the depth of four or five feet. Water thrown up into the air will fall down in icicles; birds are frozen in their flight, and travellers in their ſledges. In ſome provinces the heats of ſummer are as ſcorching as the winter colds are rigorous.

91 Soil. The ſoil of Muſcovy varies ſtill more than the climate, according to the influence of the ſun and the ſituation of the country. In the warmer provinces, the proceſs of vegetation is ſo rapid, that corn is commonly reaped in two months after it begins to appear above the ſurface of the ground. Hence the great variety of muſhrooms produced ſpontaneouſly in Ruſſia, which may be conſidered as a comfortable relief to the poor, while they appear as delicacies at the tables of the rich. Above 1000 waggon-loads of them uſed to be ſold annually in Moſcow. Perhaps it is on account of the ſcarcity of proviſions that ſuch a number of faſts are inſtituted in the Moſcovite religion.

92 Animal, vegetable, and foſſile productions. Beſides the productions already mentioned as peculiar to each of the three great natural diviſions of the empire, Muſcovy yields rhubarb, flax, hemp, paſture for cattle, wax, and honey. Among other vegetables, we find in Ruſſia a particular kind of rice called *pſyutha*, plenty of excellent melons, and in the neighbourhood of Aſtracan the famous zoophyton, or animal plant, which the Muſcovites call *boranetz*, or Tartarian lamb, from its reſemblance to a lamb. See the article *Scythian Lamb*.

93 State of agriculture. Agriculture in general is but little underſtood, and leſs proſecuted in this country. The moſt conſiderable [illegible] articles in the œconomy of a Ruſſian farmer are [illegible]

Ruſſia. honey, by which the peaſant is often enriched. He cuts down a great number of trees in the foreſt, and ſawing the trunks into a number of parts, bores each of theſe, and ſtops up the hollow at both ends, leaving only a little hole for the admittance of the bees; thus the honey is ſecured from all the attempts of the bear, who is extremely fond of it, and tries many different experiments for making himſelf maſter of the luſcious treaſure.—Of this honey the Ruſſians make a great quantity of ſtrong metheglin for their ordinary drink. They likewiſe extract from rye a ſpirit, which they prefer to brandy.

94 Animals. The wild beaſts in the Northern parts of Ruſſia are the ſame with thoſe we have mentioned in the articles of Norway and Lapland: ſuch as rein-deer, bears, foxes, ermins, martens, ſables, hares, and ſquirrels. In the more ſouthern provinces the Muſcovites breed black cattle, ſmall but hardy horſes, ſheep, goats, and camels. The breed of cattle and horſes has been enlarged by the care and under the protection of Peter and ſucceeding ſovereigns. The whole empire abounds with wild-fowl and game of all ſorts, and a variety of birds of prey; beſides the different kinds of poultry, which are raiſed in this as well as in other countries. The external parts and provinces of Muſcovy are well ſupplied with ſea-fiſh from the Northern ocean, the Baltic, or gulph of Finland, the White ſea, the Black ſea, and the Caſpian; but the whole empire is plentifully provided with freſh-water fiſh from the numerous lakes and rivers, yielding immenſe quantities of ſalmon, trout, pike, ſturgeon, and belluga: the laſt being a large fiſh, of whoſe roe the beſt caviare is made. Innumerable inſects, like thoſe of Lapland, are hatched by the ſummer's heat in the ſand, moraſſes, and foreſts, with which this empire abounds; and are ſo troubleſome as to render great part of the country altogether uninhabitable.

95 Inhabitants. The Ruſſian empire is inhabited by no leſs than 16 different nations, of which our limits will hardly permit us to give the names. The firſt are the Sclavonic nations, comprehending the Ruſſians, who are the predominant inhabitants of the whole empire, and the Poles, who beſides occupying the countries lately wreſted from the republic, live in the governments of Polatſk and Moghiley, as well as in the diſtrict of Salenghinſk and along the river Irtiſh. 2. The Germanic nations, comprehending the Germans properly ſo called, who inhabit Eſthonia and Livonia; the Swedes inhabiting the Ruſſian Finland, as well as ſome of the iſlands on the Baltic ſea; and the Danes, who inhabit the iſlands of the Baltic ſea, the Worms, and Groſs or Great Roge. 3. The Lettonian or Livonian nations, under which are claſſed the original or real Lettonians or Letiſhi, inhabiting Livonia; and the Lithuanians, who live in the government of Polatſk and Moghilev. 4. The Finns, or Tchudi, nations who inhabit the governments of Viberg and St Peterſburgh, with many other diſtricts of the empire, being branched out into no fewer than 12 different tribes. 5. The Tartarian nations, who are all either Mahometans or idolators. The Mahometan Tartars, commonly called by the Ruſſians *Tartare*, dwell in Kazane, and the places adjacent; at Keſimov; at Ouſe, in the government of Parma; at Tomſk and its neighbourhood, and are in general a ſober, induſtrious, cleanly, and generous people. The other Tartars inhabit different parts of Siberia, and are intermixed with ſtill different races, called after the towns, rivers, and other places to which their habitations are neareſt.—They are, as we have ſaid, idolators, and governed by ſhamens. (See SHAMEN.) Beſides theſe, there are in the Ruſſian dominions the Nagay Tartars; the Crim-Tartars, inhabiting the Crimea, who, together with the land belonging to them, came under the ſubjection of Ruſſia in 1783; the Meſcheraki; the Baſhkirs; the Kirghiſtzi or Kirghis-kaiſaks; the Yakouti; and the white Kalmuks. 6. The Caucaſian nations, which are ſix in number, and are each ſubdivided into many different tribes, of which it is probable that few of our readers have ever heard the names, except of the Circaſſians, who live in different ſettlements bordering on the river Kubane. 7. The Samoyeds or Samoeds, comprehending the Oſtiacks*. Theſe inhabit the northernmoſt part of Ruſſia, along the coaſt of the Icy ſea.—8. The Mungalian nations, comprehending the original Mungals, who are chiefly diſperſed in the deſerts of Gobey: the Bourati, who live on the banks of the Baikal, and other places in the government of Irkoutſk; and the Kalmuks, conſiſting of four different tribes.—All theſe hordes ſpeak the Mungalian language, obſerve the religion of Lama and the Kalmuks live in large tents. 9. The Tongooſi, a very populous tribe, diſperſed from the river Eniſſey as far as the ſea of Okhotſk, and from the Penjinſkaya Gooba beyond the Chineſe frontier. They are all idolators, and live by hunting and fiſhing. 10. The Kamtchadels. 11. The Koriaki. 12. The Kouriltzi. Of theſe three nations we have given ſome account under the article KAMTSCHATKA. 13. The Aleouti, who dwell in the iſlands between Siberia and America, and very much reſemble the Eſquimaux and the inhabitants of Greenland.—They live in large huts, and ſeem to be idolators.—14. The Arintzi, a very numerous people ſcattered in the government of Kolhivane. 15. The Yukaghiri, who are diſperſed on the coaſts of the Glacial ſea, about the rivers Yana, Kolhima, and Lena, and as far as the ſource of the Anadir. 16. The Tchouktchi, who occupy the north-eaſtern part of Siberia, between the rivers Kolhima and Anadir. Beſides theſe ſixteen different nations, there are ſcattered through the Ruſſian empire vaſt numbers of Buckharian Tartars, Perſians, Georgians, Indians, Greeks, Servians, Albanians, Bulgarians, Moldavians, Valekians, Armenians, and Jews.

Ruſſia.

* See Oſtiacks.

96 Population. The empire of Ruſſia is ſo widely extended, that notwithſtanding the number of nations which it comprehends, it muſt be conſidered as by no means populous. At the laſt reviſion it was found to contain 26 millions of ſouls; but it is to be obſerved, that the nobility, clergy, land as well as ſea forces, different officers, ſervants belonging to the court, perſons employed under government in civil and other offices; the ſtudents of different univerſities, academies, ſeminaries, and other ſchools; hoſpitals of different denominations; likewiſe all the irregular troops, the roving hordes of different tribes, foreigners and coloniſts, or ſettlers of different nations—are not included in the abovementioned number: but with the addition of all theſe, the population of Ruſſia, of both ſexes, may be ſuppoſed to come near to 28 millions.

To

Ruſſia.

97 Character.

To ſuch a vaſt variety of people, nations, and languages, it is needleſs to obſerve, that no general character can with truth be applied. The native Ruſſians are ſtigmatiſed by their neighbours as ignorant and brutal, totally reſigned to ſloth, and addicted to drunkenneſs, even in the moſt beaſtly exceſs; nay, they are accuſed of being arbitrary, perfidious, inhuman, and deſtitute of every ſocial virtue. There is not a phraſe in their language analogous to ours, "the manners or the ſentiments of a gentleman;" nor does *gentleman* with them expreſs any thing moral. Indeed they have no ſuch diſtinction. Cunning is *profeſſed* and *gloried in* by all; and the nobleman whom you detect telling a lie is vexed, but not in the leaſt aſhamed. In the whole *reglement* of the marine by Peter the Great, there is not one word addreſſed to the honour, or even to the probity, of his officers. Hopes of reward, and the conſtant fear of detection and puniſhment, are the only motives touched on. In every ſhip of war, and in every regiment, there is a fiſcal or authorized ſpy, a man of reſpectable rank, whoſe letters muſt not be opened but at the riſk of the great knout (ſee KNOUT); and he is required by expreſs ſtatute to give monthly reports of the behaviour of the officers and privates.

Such regulations we cannot think well adapted to improve the morals of the people; yet we believe they have been improved by the care, aſſiduity, and example of ſome of their late ſovereigns. Certain it is, the vice of drunkenneſs was ſo univerſally prevalent among them, that Peter I. was obliged to reſtrain it by very ſevere edicts, which, however, have not produced much effect. They numbered in the city of Moſcow no fewer than 4000 brandy-ſhops, in which the inhabitants uſed to ſot away their time in drinking ſtrong liquors and ſmoking tobacco. This laſt practice became ſo dangerous, among perſons in the moſt beaſtly ſtate of intoxication, that a very ſevere law was found neceſſary to prevent the pernicious conſequences, otherwiſe the whole city might have been conſumed by conflagrations. The nobility were heretofore very powerful, each commanding a great number of vaſſals, whom they ruled with the moſt deſpotic and barbarous authority: but their poſſeſſions have been gradually circumſcribed, and their power transferred in a great meaſure to the czar, on whom they are now wholly dependent. At preſent there is no other degree of the nobility but that of the boyars: theſe are admitted to the council, and from among them the waivodes, governors, and other great officers, are nominated, and their ranks with reſpect to each other are regulated by the importance of their reſpective offices.

98 Diſtinctions of rank.

Alexis, who introduced this order of precedency, abhorred the perſonal abaſement of the inferior claſſes to their ſuperiors, which he would not accept of when exhibited to himſelf; and it may appear ſurprizing that Peter, who deſpiſed mere ceremonials, ſhould have encouraged every extravagance of this kind. In a few years of his reign, the beautiful ſimplicity of deſignation and addreſs which his father had encouraged was forgotten, and the cumberſome and almoſt ineffable titles which diſgrace the little courts of Germany were crowded into the language of Ruſſia. He enjoined the loweſt order of gentlemen to be addreſſed by the phraſe, *your reſpectable birth*; the next rank, by *your high good birth*; the third, *your excellence*; the fourth, *your high excellence*; then came *your brilliancy* and *high brilliancy*. *Highneſs* and *majeſty* were reſerved for the great duke and czar.

Theſe titles and modes of addreſs were ordered with all the regularity of the manual exerciſe; and the man who ſhould omit any of them when ſpeaking to his ſuperior might be lawfully beaten by the offended boyar. Before this period, it was polite and courtly to ſpeak to every man, even the heir apparent, by adding his father's name to his own; and to the great duke, Paul Petrovitz was perfectly reſpectful, or a ſingle word, ſignifying *dear father*, when he was not named. Tho' pompous titles were unknown among them before the era of Peter, the ſubordination of ranks was more complete than in any other European nation; but with this ſimplicity peculiar to them and the Poles, that they had but three ranks, the ſovereign, the nobleſſe or gentry, and the ſerfs. It was not till very lately that the mercantile rank formed any diſtinction; and that diſtinction is no more than the freedom of the perſon, which was formerly a transferable commodity belonging to the boyar. Notwithſtanding this ſimplicity, which put all gentlemen on a level, the ſubſcription of a perſon holding an inferior office was not *ſervant*, but *ſlave*; and the legal word for a petition in form was *tchelobitii*, which ſignifies, "a beating with the forehead," *i. e.* ſtriking the ground with the forehead; which was actually done. The father of Alexis aboliſhed the practice; but at this day, when a Ruſſian petitions you, he touches his forehead with his finger; and if he be very earneſt, he then puts his finger to the ground.

The Ruſſian nobles formerly wore long beards, and long robes with ſtrait ſleeves dangling down to their ancles: their collars and ſhirts were generally wrought with ſilk of different colours: in lieu of hats, they covered their heads with furred caps; and, inſtead of ſhoes, wore red or yellow leathern buſkins. The dreſs of the women nearly reſembled that of the other ſex; with this difference, that their garments were more looſe, their caps fantaſtical, and their ſhift-ſleeves three or four ells in length, gathered up in folds from the ſhoulder to the fore-arm. By this time, however, the French faſhions prevail among the better ſort throughout all Muſcovy.

99 Manners and cuſtoms.

The common people are generally tall, healthy, and robuſt, patient of cold and hunger, inured to hardſhips, and remarkably capable of bearing the moſt ſudden tranſition from the extremes of hot or cold weather. Nothing is more cuſtomary than to ſee a Ruſſian, who is over-heated and ſweating at every pore, ſtrip himſelf naked, and plunge into a river: nay, when their pores are all opened in the hot-bath, to which they have daily recourſe, they either practice this immerſion, or ſubject themſelves to a diſcharge of ſome pailfuls of cold water. This is the cuſtom of both men and women, who enter the baths promiſcuouſly, and appear naked to each other, without ſcruple or heſitation.

A Ruſſian will ſubſiſt for many days upon a little oatmeal and water, and even raw roots: an onion is a regale; but the food they generally uſe in their journeys is a kind of rye-bread, cut into ſmall ſquare pieces, and dried again in the oven: theſe, when they are hungry, they ſteak in water, and eat as a very com-

Ruſſia. fortable repaſt. Both ſexes are remarkably healthy and robuſt, and accuſtom themſelves to ſleep every day after dinner.

The Ruſſian women are remarkably fair, comely, ſtrong, and well ſhaped, obedient to their lordly huſbands, and patient under diſcipline: they are even ſaid to be fond of correction, which they conſider as an infallible mark of their huſband's conjugal affection; and they pout and pine if it be with-held, as if they thought themſelves treated with contempt and diſregard. Of this neglect, however, they have very little cauſe to complain; the Ruſſian huſband being very well diſpoſed, by nature and inebriation, to exert his arbitrary power. Some writers obſerve, that, on the wedding-day, the bride preſents the bridegroom with a whip of her own making, in token of ſubmiſſion; and this he fails not to employ as the inſtrument of his authority. Very little ceremony is here uſed in match-making, which is the work of the parents. Perhaps the bridegroom never ſees the woman till he is joined to her for life. The marriage being propoſed and agreed to, the lady is examined, ſtark-naked, by a certain number of her female relations; and if they find any bodily defect, they endeavour to cure it by their own ſkill and experience. The bride, on her wedding-day, is crowned with a garland of wormwood, implying the bitterneſs that often attends the married ſtate. When the prieſt has tied the nuptial knot at the altar, his clerk or ſexton throws upon her head a handful of hops, wiſhing that ſhe may prove as fruitful as the plant thus ſcattered. She is muffled up, and led home by a certain number of old women, the pariſh-prieſt carrying the croſs before; while one of his ſubalterns, in a rough goat-ſkin, prays all the way that ſhe may bear as many children as there are hairs on his garment. The new-married couple, being ſeated at table, are preſented with bread and ſalt; and a chorus of boys and girls ſing the epithalamium, which is always groſsly obſcene. This ceremony being performed, the bride and bridegroom are conducted to their own chamber by an old woman, who exhorts the wife to obey her huſband, and retires. Then the bridegroom deſires the lady to pull off one of his buſkins, giving her to underſtand, that in one of them is contained a whip, and in the other a jewel or a purſe of money. She takes her choice; and if ſhe finds the purſes interprets it into a good omen; whereas ſhould ſhe light on the whip, ſhe conſtrues it into an unhappy preſage, and inſtantly receives a laſh as a ſpecimen of what ſhe has to expect. After they have remained two hours together, they are interrupted by a deputation of old women, who come to ſearch for the ſigns of her virginity: if theſe are apparent, the young lady ties up her hair, which before conſummation hung looſe over her ſhoulders, and viſits her mother, of whom ſhe demands the marriage portion. It is generally agreed, that the Muſcovite huſbands are barbarous even to a proverb; they not only adminiſter frequent and ſevere correction to their wives, but ſometimes even torture them to death, without being ſubject to any puniſhment for the murder.

100 Of their marriages.

The canon law of Muſcovy forbids the conjugal commerce on Mondays, Wedneſdays, and Fridays; and whoever tranſgreſſes this law, muſt bathe himſelf before he enters the church-porch. He that marries a ſecond wife, the firſt being alive, is not admitted farther than the church-door: and if any man eſpouſes a third, he is excommunicated: ſo that though bigamy is tolerated, they nevertheleſs count it infamous. If a woman is barren, the huſband generally perſuades her to retire into a convent: if fair means will not ſucceed, he is at liberty to whip her into condeſcenſion. When the czar, or emperor, has an inclination for a wife, the moſt beautiful maidens of the empire are preſented to him for his choice. Ruſſia.

The education of the czarovitz, or prince royal, is intruſted to the care of a few perſons, by whom he is ſtrictly kept from the eyes of the vulgar, until he hath attained the 15th year of his age: then he is publicly expoſed in the market-place, that the people, by viewing him attentively, may remember his perſon, in order to aſcertain his identity; for they have more than once been deceived by impoſters.

101 Authority of parents over their children.

Such is the ſlavery in which the Muſcovites of both ſexes are kept by their parents, their patrons, and the emperor, that they are not allowed to diſpute any match that may be provided for them by theſe directors, however diſagreeable or odious it may be. Officers of the greateſt rank in the army, both natives and foreigners, have been ſaddled with wives by the ſovereign in this arbitrary manner. A great general ſome time ago deceaſed, who was a native of Britain, having been preſſed by the late czarina to wed one of her ladies, ſaved himſelf from a very diſagreeable marriage, by pretending his conſtitution was ſo unſound, that the lady would be irreparably injured by his compliance.

In Ruſſia, the authority of parents over their children is almoſt as great as it was among the ancient Romans, and is often exerciſed with equal ſeverity. Should a father, in puniſhing his ſon for a fault, be the immediate cauſe of his death, he could not be called to account for his conduct; he would have done nothing but what the law authoriſed him to do. Nor does this legal tyranny ceaſe with the minority of children; it continues while they remain in their father's family, and is often exerted in the moſt indecent manner. It is not uncommon, even in St Peterſburgh, to ſee a lady of the higheſt rank, and in all the pomp and pride of youthful beauty, ſtanding in the court-yard with her back bare, expoſed to the whip of her father's ſervants. And ſo little diſgrace is attached to this puniſhment, that the ſame lady will ſit down at table with her father and his gueſts immediately after ſhe has ſuffered her flogging, provided its ſeverity has not confined her to bed.

102 Muſic and dancing.

The Muſcovites are fond of the bagpipe, and have a kind of violin, with a large belly like that of a lute; but their muſic is very barbarous and defective. Nevertheleſs, there are public ſchools, in which the children are regularly taught to ſing. The very beggars aſk alms in a whining cadence, and ridiculous ſort of recitative. A Ruſſian ambaſſador at the Hague, having been regaled with the beſt concert of vocal and inſtrumental muſic that could be procured, was aſked how he liked the entertainment? he replied, "Perfectly well: the beggars in my country ſing juſt in the ſame manner." The warlike muſic of the Ruſſians conſiſts in kettle-drums and trumpets: they likewiſe uſe hunting horns; but they are not at all expert in the performance

Ruſſia. formance. It has been ſaid, that the Ruſſians think it beneath them to dance, and that they call in their Poliſh or Tartarian ſlaves to divert them with this exerciſe in their hours of diſſipation. Such may have been the caſe formerly, or may be ſo now, in the diſtant and moſt barbarous provinces of the empire; but at St Peterſburgh dancing is at preſent much reliſhed, and a minuet is nowhere ſo gracefully performed in Europe as by the faſhionable people in that metropolis.

103 Language. We have elſewhere obſerved, that the Ruſſian language is a dialect of the Sclavonic, and the pureſt perhaps that is now anywhere to be found (ſee PHILOLOGY, Sect. ix. § 3.); but they have nothing ancient written in it, except a tranſlation of Chryſoſtom's Offices for Eaſter, which are at this day good Ruſſian, and intelligible to every boor, though certainly not leſs than 800 years old. There is no Ruſſian poetry which there is reaſon to believe 200 years old; and the oldeſt tranſlation of the Scriptures into that language

104 Learning and ſcience. is but a late thing, and come to them from Koningſberg. Science has made but a very ſmall progreſs among them; and the reputation of the imperial academy at St Peterſburgh has been hitherto ſupported by the exertions of foreigners. For antiquarian research they have as little reliſh as for ſcientific inveſtigation. Every thing, to pleaſe, muſt be new; and the only elucidations which we have of their antiquities are the performances of Germans and other foreigners, ſuch as profeſſors Bayer, Muller, and Gmelin. One native has indeed ſhown ſome deſire to recover and preſerve what he can of their moſt ancient poetry; but in his reſearches, he ſeems more indebted to an exquiſitely nice ear than to any erudition. Erudition indeed they hold in the moſt ſovereign contempt. No gentleman is ever taught Latin or Greek; and were a Ruſſian ſtranger in company to give any hint of his poſſeſſing ſuch knowledge, every man with a ſword would draw away his chair, and ſet him down for a charity-boy. Peter the Great and the preſent empreſs have done what ſovereigns could do to diſpel theſe clouds of ignorance, by inſtituting ſchools and colleges, and giving the maſters and profeſſors military rank; but all in vain. One of the moſt accompliſhed ſcholars of the age, after having made himſelf extremely agreeable to a company of ladies, by means of his taſte in muſic, and a ſword at his ſide, was inſtantly deſerted by them upon ſome perſon's whiſpering through the room that he was a man of learning; and before his fair companions would be reconciled to him, he was obliged to pretend that he was a lieutenant-colonel totally illiterate.

The two firſt ſentences of Prince Shtcherbatoff's dedication of his Hiſtory of Ruſſia, which was printed in three volumes 4to, in 1770, afford an admirable ſpecimen of Ruſſian literature. "The hiſtory of the human underſtanding (ſays this dedicator) aſſures us, that everywhere the ſciences have followed the progreſs of the proſperity and the ſtrength of kingdoms. When the Grecian arms had overthrown the greateſt monarchy then in the world, when they had the famous generals Miltiades, Themiſtocles, Ariſtides, Conon, and Alcibiades, at the ſame time flouriſhed among them Anaximander, Anaxagoras, Archytas, Socrates, and Plato. And when Auguſtus had conquered the world, and had ſhut the gates of the temple of Janus, and the proud Romans, under his happy government, cheerfully obeyed his commands, then did Titus Livius, Thucydides, Virgil, and Horace, adorn his court, and celebrate his glory."—A paſſage ſo replete as this with blunders and anachroniſms it would ſurely be difficult to find in any other author. Ruſſia.

105 Religion. The Ruſſians were converted to the Chriſtian religion towards the latter end of the tenth century, as has been already related. Since that period they have confeſſed the articles of the Greek church, mingled with certain ſuperſtitious ceremonies of their own. They do not believe in the pope's infallibility or ſupremacy, or even hold communion with the ſee of Rome: they uſe auricular confeſſion, communicate in both kinds, adopt the Athanaſian creed, and adhere to the eſtabliſhed liturgy of St Baſil. They worſhip the Virgin Mary, and other ſaints; and pay their adorations to croſſes and relics. They obſerve four great faſts in the year, during which they neither taſte fiſh, fleſh, nor any animal production: they will not drink after a man who has eaten fleſh, nor uſe a knife that has cut meat in leſs than 24 hours after it has been uſed; nor will they, even though their health is at ſtake, touch any thing in which hartſhorn or any animal ſubſtance has been infuſed. While this kind of Lent continues, they ſubſiſt upon cabbage, cucumbers, and rye-bread, drinking nothing ſtronger than a ſort of ſmall beer called *quaſſi*†. They likewiſe faſt every Wedneſday and Friday. Their common penance is to abſtain from every ſpecies of food and drink, but bread, ſalt, cucumbers, and water. They are ordered to bend their bodies, and continue in that painful poſture, and between whiles to ſtrike their head againſt an image.

†See Peaſant.

The Muſcovites at all times reject as impure, horſe-fleſh, elk, veal, hare, rabbit, aſs's milk, mare's milk, and Venice treacle, becauſe the fleſh of vipers is an ingredient; alſo every thing that contains even the ſmalleſt quantity of muſk, civet, and caſtor: yet they have no averſion to ſwine's fleſh; on the contrary, the country produces excellent bacon. They celebrate 15 grand feſtivals in the year. On Palm-Sunday there is a magnificent proceſſion, at which the czar aſſiſts in perſon and on foot. He is appareiled in cloth of gold; his train is borne up by the prime of the nobility, and he is attended by his whole court. He is immediately preceded by the officers of his houſehold, one of whom carries his handkerchief on his arm, lying upon another of the richeſt embroidery. He halts at a ſort of platform of free-ſtone, where, turning to the eaſt, and bending his body almoſt double, he pronounces a ſhort prayer: then he proceeds to the church of Jeruſalem, where he renews his devotion. This exerciſe being performed, he returns to his palace, the bridle of the patriarch's horſe reſting upon his arm. The horſe's head being covered with white linen, is held by ſome nobleman; while the patriarch, ſitting ſidewiſe, and holding a croſs in his hand, diſtributes benedictions as he moves along: on his head he wears a cap edged with ermin, adorned with loops and buttons of gold and precious ſtones: before him are diſplayed banners of conſecrated ſtuff, in a variety of colours. Above 500 prieſts walk in the proceſſion; thoſe who are near the patriarch bearing pictures of the Virgin Mary, richly ornamented with gold, jewels, and pearls, together with croſſes, relics, and religious books, including a copy of the Goſpels, which they reckon to be of ineſtimable.

Ruſſia. eſtimable value. In the the midſt of this proceſſion is borne a triumphal arch; and on the top an apple-tree covered with fruit, which ſeveral little boys incloſed in the machine endeavour to gather. The lawyers and laity carry branches of willow; the guards and the ſpectators proſtrate themſelves on the ground while the proceſſion halts; and after the ceremony, the patriarch preſents a purſe of 100 rubles to the czar, who perhaps invites him to dine at his table. During the ſeaſon of Eaſter, the whole empire is filled with mirth and rejoicing: which, however, never fails to degenerate into heat and debauchery; even the ladies may indulge themſelves with ſtrong liquors to intoxication without ſcandal. When a lady ſends to inquire concerning the health of her gueſts whom ſhe entertained over-night, the uſual reply is, "I thank your miſtreſs for her good cheer: by my troth, I was ſo merry that I don't remember how I got home."

During theſe carnivals, a great number of people, in reeling home drunk, fall down and periſh among the ſnow. It is even dangerous to relieve a perſon thus overtaken; for, ſhould he die, the perſon who endeavoured to aſſiſt him is called before the judge, and generally pays dear for his charity.

The Muſcovite prieſts uſe exorciſms at the adminiſtration of baptiſm. They plunge the child three times over head and ears in water, and give it the ſacrament of the Lord's Supper in one ſpecies, until it hath attained the age of ſeven; after which the child is indulged with it in both kinds. They likewiſe adminiſter the ſacrament to dying perſons, together with extreme unction; and if this be neglected, the body is denied Chriſtian burial. Soon as the perſon expires, the body is depoſited in a coffin, with a luncheon of bread, a pair of ſhoes, ſome few pieces of money, and a certificate ſigned by the pariſh-prieſt, and directed to St Nicholas, who is one of their great patrons. They likewiſe hold St Andrew in great veneration, and ridiculouſly pretend they were converted by him to Chriſtianity. But next to St Nicholas, they adore St Anthony of Padua, who is ſuppoſed to have ſailed upon a mill-ſtone through the Mediterranean and Atlantic, and over the lakes Ladoga and Onega, as far as Novogorod. Every houſe is furniſhed with an image of St Nicholas, carved in the moſt rude and fantaſtic manner; and when it becomes old and worm-eaten, the owner either throws it into the river with a few pieces of coin, ſaying, "Adieu, brother;" or returns it to the maker, who accommodates him with a new image for a proper conſideration. The good women were very careful in adorning their private St Nicholaſes with rich clothes and jewels; but on any emergency, theſe are reſumed, and the ſaint left as naked as he came from the hand of the carpenter.

There are monaſteries in Ruſſia; but neither the monks nor the nuns are ſubject to ſevere reſtrictions. The friars are either horſe-jockeys, or trade in hops, wheat, and other commodities; the ſiſters are at liberty to go abroad when they pleaſe, and indulge themſelves in all manner of freedoms.

Heretofore liberty of conſcience was denied, and every convicted heretic was committed to the flames; but ſince the reign of Peter, all religions and ſects are tolerated throughout the empire. Roman Catholics, Lutherans, Calviniſts, Armenians, Jews, and Mahometans, enjoy the free exerciſe of their reſpective forms of worſhip; though it was not without great difficulty, and by dint of extraordinary ſolicitation from different powers, that the Romiſh religion was allowed. Peter knowing the dangerous tenets of a religion that might ſet the ſpiritual power of the pope at variance with the temporal power of the emperor, and being well acquainted with the meddling genius of its profeſſors, held out for ſome time againſt the interceſſion of Germany, France, and Poland; and though at length he yielded to their joint interpoſition, he would by no means ſuffer any Jeſuit to enter his dominions. Ruſſia.

106
Government.

The government of Ruſſia is mere deſpotiſm. The whole empire is ruled by the arbitrary will and pleaſure of the ſovereign, who is ſtyled the *czar* or *tzar*, a title which is probably a corruption of Cæſar. Heretofore he was ſtyled *grand duke of Muſcovy*: but ſince the reign of Peter, he is dignified with the appellation of *emperor of Ruſſia*; and the preſent ſovereign is ſtyled *empreſs of all the Ruſſias*. The emperor is abſolute lord, not only of all the eſtates in the empire, but alſo of the lives of his ſubjects; the greateſt noblemen call themſelves his *ſlaves*, and execute his commands with the moſt implicit obedience. The common people revere him as ſomething ſupernatural; they never mention his name, or any thing immediately belonging to him, without marks of the moſt profound reſpect and awful veneration. A man aſking a carpenter at work upon one of the czar's warehouſes, what the place was intended for? anſwered, "None but God and the czar knows."

The nobility of Ruſſia were formerly rich and powerful, and ruled deſpotically over their inferiors: but we have ſeen how the father of Peter the Great contrived to ſtrip them of their privileges, and they are now venal dependants on the court. They ſtill retain the titles of their anceſtors, though many of them are in the moſt abject poverty and contempt.

All the peaſants in the empire are conſidered as immediate ſlaves belonging to the czar, to the boyars, or to the monaſteries. The value of eſtates is computed, not by the extent or quality of the land, but from the number of thoſe peaſants, who may be ſold, alienated, or given away, at the pleaſure of their maſters. The number of theſe huſbandmen, whither living in villages or in the open country, being known, the czar, by requiring a certain proportion of each lord or proprietor, can raiſe 300,000 men in leſs than 40 days.

The adminiſtration is managed by a grand council, called *dumnoy boyaren*, or "council of the boyars," who are the grandees of the empire, and act as privy counſellors. To this are ſubſervient ſix inferior chambers and courts of judicature, provided each with a preſident. The firſt regulates every thing relating to ambaſſadors and foreign negociations; the ſecond takes cognizance of military affairs; the third manages the public revenues of the empire; the buſineſs of the fourth is to encourage, protect, and improve trade and commerce. The two laſt hear and determine in all cauſes, whether civil or criminal.

Peter divided the empire into the eight governments of Moſcow, Archangel, Aſoph, Caſan, Aſtracan, Chioif and the Ukraine, Siberia, Livonia, comprehending Ingria, Pleſcow, and Novogorod, Smolenſko, and Veronitz. The governors or waivodes were veſted with power to diſpoſe of all employments civil and military, and receive the revenues. They were directed to

Ruſſia. defray all expences in their reſpective governments, and ſend a certain yearly ſum to the great treaſury. In a word, they enjoyed abſolute power in every thing but what related to the regular troops, which, though quartered in their juriſdiction, were neither paid nor directed by them, but received their orders immediately from the czar or his generals.

107 Adminiſtration of juſtice.

In 1775 the preſent empreſs made a complete new-modelling of the internal government in a form of great ſimplicity and uniformity. By this reglement ſhe divided the whole empire into 43 governments, as we have already mentioned, placing over each, or where they are of leſs extent, over two contiguous governments, a governor-general with very conſiderable powers. She ſubdivided each government into provinces and diſtricts; and for the better adminiſtration of juſtice erected in them various courts of law, civil, criminal, and commercial, analogous to thoſe which are found in other countries. She eſtabliſhed likewiſe in every government, if not in every province, a tribunal of conſcience, and in every diſtrict a chamber for the protection of orphans. Amidſt ſo many wiſe inſtitutions a chamber for the adminiſtration of her imperial majeſty's revenues was not forgotten to be eſtabliſhed in each government, nor a tribunal of police in each diſtrict. The duty of the governor-general, who is not properly a judge, but the guardian of the laws, is to take care that the various tribunals in his government diſcharge their reſpective duties, to protect the oppreſſed, to enforce the adminiſtration of the laws; and when any tribunal ſhall appear to have pronounced an irregular ſentence, to ſtop the execution till he make a report to the ſenate and receive her majeſty's orders: It is his buſineſs likewiſe to ſee that the taxes be regularly paid; and, on the frontiers of the empire, that the proper number of troops be kept up, and that they be attentive to their duty.

This reglement contains other inſtitutions, as well as many directions for the conducting of law-ſuits in the different courts, and the adminiſtration of juſtice, which do her majeſty the higheſt honour; but the general want of morals, and what we call a ſenſe of honour, in every order of men through this vaſt empire, muſt make the wiſeſt regulations of little avail. Ruſſia is perhaps the only nation in Europe where the law is not an incorporated profeſſion. There are no ſeminaries where a practitioner muſt be educated. Any man who will pay the fees of office may become an attorney, and any man who can find a client may plead at the bar. The judges are not more learned than the pleaders. They are not fitted for their offices by any kind of education; nor are they neceſſarily choſen from thoſe who have frequented courts and been in the practice of pleading. A general, from a ſucceſsful or an equivocal campaign, may be inſtantly ſet at the head of a court of juſtice; and in the abſence of the imperial court from St Peterſburgh, the commanding officer in that city, whoever he may be, preſides *ex officio* in the high court of juſtice. The other courts generally change their preſidents every year. Many inconveniences muſt ariſe from this ſingular conſtitution; but fewer, perhaps, than we are apt to imagine. The appointment to ſo many inferior governments makes the Ruſſian nobility acquainted with the groſs of the ordinary buſineſs of law-courts; and a ſtatute or imperial edict is law in every caſe. The great obſtacles to the adminiſtration of juſtice are the contrariety of the laws and the venality of the judges. From inferior to ſuperior courts there are two appeals; and in a great proportion of the cauſes the reverſal of the ſentence of the inferior courts ſubjects its judges to a heavy fine, unleſs they can produce an edict in full point in ſupport of their deciſion. This indeed they ſeldom find any difficulty to do; for there is hardly a caſe ſo ſimple but that edicts may be found clear and preciſe for both parties; and therefore the judges, ſenſible of their ſafety, are very ſeldom incorruptible. To the principle of honour, which often guides the conduct of judges in other nations, they are ſuch abſolute ſtrangers, that an officer has been ſeen ſitting in ſtate and diſtributing juſtice from a bench to which he was chained by an iron collar round his neck, for having the day before been detected in conniving at ſmuggling. This man ſeemed not to be aſhamed of the crime, nor did any one avoid his company in the evening. Ruſſia.

Few crimes are capital in Ruſſia: murder may be atoned by paying a ſum of money; nay, the civil magiſtrate takes no cognizance of murder, without having previouſly received information at the ſuit of ſome individuals. Criminals were puniſhed with torture and the moſt cruel deaths till the reign of the illuſtrious Catharine I. when a more merciful ſyſtem took place, and which the preſent empreſs has ſince confirmed by law. See the articles *Catharine I. of Ruſſia*, and *Elizabeth Petrowna*.

108 Trade and revenue.

We have already mentioned the traffic of the Ruſſians with the different nations both of Aſia and Europe, and ſpecified iron as one of the articles which they export. We may here add, that in 1792 there were in the government of Parma alone, which lies in the northern diviſion of the empire, 88 copper and iron works belonging to the government and private perſons, and three gold works. The metals extracted in theſe works are chiefly conveyed to St Peterſburgh by water-carriage on the river Tchuſovaya, which falls into the Kama. With reſpect to the revenue of Ruſſia, it continually fluctuates, according to the increaſe of commerce or the pleaſure of the czar, who has all the wealth of the empire at his diſpoſal. He monopolizes all the beſt furs, mines, minerals, and the trade by land to the Eaſt Indies; he farms out all the tobacco, wine, brandy, beer, mead, and other liquors; the inns, taverns, public houſes, bath, and ſweating-houſes. The cuſtoms upon merchandize, the impoſts upon corn, and toll exacted from cities, towns, and villages, are very conſiderable. He poſſeſſes demeſnes to a very great value; inherits the effects of all thoſe that die inteſtate, or under accuſation of capital crimes; derives a duty from all law-ſuits; and to ſum up the whole, can command the fortunes of all his ſubjects. All theſe articles produce a large revenue, which was three years ago eſtimated at upwards of 40,000,000 rubles, or L. 6,333,333 : 6 : 8 Sterling; but then the intrinſic value of money is at leaſt three times greater in Ruſſia than in Britain. The expences in time of peace never exceed 38,000,000 rubles: the remainder is not treaſured up, but is employed by her imperial majeſty in conſtructing public edifices, making harbours, canals, roads, and other uſeful works, for the glory of the empire and benefit of her ſubjects.

The ſtanding army of Ruſſia is computed at 250,000 men; beſides theſe, the Ruſſians can aſſemble a body of

Ruſt ‖ Ruta.

of 40,000 irregulars, Calmucks, Coſſacks, and other Tartars, who live under their dominion. But the number may be doubled on any emergency. The czarina has likewiſe a conſiderable fleet in the Baltic, and a great number of formidable galleys, frigates, fire-ſhips, and bomb-ketches.

RUST, the flower or calx of any metal, procured by corroding and diſſolving its ſuperficial parts by ſome menſtruum. Water is the great inſtrument or agent in producing ruſt: and hence oils, and other fatty bodies, ſecure metals from ruſt; water being no menſtruum for oil, and therefore not able to make its way through it. All metals except gold are liable to ruſt; and even this alſo if expoſed to the fumes of ſea-ſalt. For remedies againſt ruſt, ſee IRON, *par. ult.*

RUSTIC, in architecture, implies a manner of building in imitation of nature, rather than according to the rules of art. See ARCHITECTURE.

Rustic Gods, *dii ruſtici*, in antiquity, were the gods of the country, or thoſe who preſided over agriculture, &c. Varro invokes the 12 *dii conſentes*, as the principal among the ruſtic gods; viz. Jupiter, Tellus, the Sun, Moon, Ceres, Bacchus, Rubigus, Flora, Minerva, Venus, Lympha, and Good Luck. Beſides theſe 12 arch-ruſtic gods, there were an infinity of leſſer ones; as Pales, Vertumnus, Tutelina, Fulgor, Sterculius, Mellona, Jugatinus, Collinus, Vallonia, Terminus, Sylvanus, and Priapus. Struvius adds the Satyrs, Fauns, Sileni, Nymphs, and even Tritons; and gives the empire over all the ruſtic gods to the god Pan.

Rustic Order, that decorated with ruſtic quoins, ruſtic work, &c.

Rustic Work, is where the ſtones in the face, &c. of a building, inſtead of being ſmooth, are hatched, or picked with the point of a hammer.

RUSTRE, in heraldry, a bearing of a diamond ſhape, pierced through in the middle with a round hole. See HERALDRY.

RUT, in hunting, the venery or copulation of deer.

RUTA, RUE: A genus of the monogynia order, belonging to the decandria claſs of plants; and in the natural method ranking under the 26th order, *Multiſiliquæ*. The calyx is quinquepartite; the petals concave; the receptacle ſurrounded with 10 melliferous pores; the capſule is lobed. In ſome flowers, a fifth part of the number is excluded. There are ſeveral ſpecies; of which the moſt remarkable is the hortenſis, or common broad-leaved garden rue, which has been long cultivated for medicinal uſe. This riſes with a ſhrubby ſtalk to the height of five or ſix feet, ſending out branches on every ſide, garniſhed with decompounded leaves, whoſe ſmall lobes are wedge-ſhaped, of a grey colour, and have a ſtrong odour. The flowers are produced at the end of the branches in bunches almoſt in the form of umbels: they are compoſed of four yellow concave petals which are cut on their edges, and eight yellow ſtamina which are longer than the petals, terminated by roundiſh ſummits. The germen becomes a roundiſh capſule, with four lobes punched full of holes containing rough black ſeeds.

Rue has a ſtrong ungrateful ſmell, and a bitteriſh penetrating taſte: the leaves, when full of vigour, are extremely acid, inſomuch as to inflame and bliſter the ſkin, if much handled. With regard to their medicinal virtues, they are powerfully ſtimulating, attenuating, and detergent; and hence, in cold phlegmatic habits, they quicken the circulation, diſſolve tenacious juices, open obſtructions of the excretory glands, and promote the fluid ſecretions. The writers on the materia medica in general have entertained a very high opinion of the virtues of this plant. Boerhaave is full of its praiſes; particularly of the eſſential oil, and the diſtilled water cohobated or re diſtilled ſeveral times from freſh parcels of the herb. After extravagantly commending other waters prepared in this manner, he adds, with regard to that of rue, that the greateſt commendations he can beſtow upon it fall ſhort of its merit: "What medicine (ſays he) can be more efficacious for promoting ſweat and perſpiration, for the cure of the hyſteric paſſion and of epilepſies, and for expelling poiſon?" Whatever ſervice rue may be of in the two laſt caſes, it undoubtedly has its uſe in the others: the cohobated water, however, is not the moſt efficacious preparation of it. An extract made by rectified ſpirit contains in a ſmall compaſs the whole virtues of the rue; this menſtruum taking up by infuſion all the pungency and flavour of the plant, and elevating nothing in diſtillation. With water, its peculiar flavour and warmth ariſe; the bitterneſs, and a conſiderable ſhare of the pungency, remaining behind.

Ruta ‖ Rutherglen.

Ruta Baga, or Swediſh turnip. See HUSBANDRY, p. 761.

BOOK OF RUTH, a canonical book of the Old Teſtament; being a kind of appendix to the book of Judges, and an introduction to thoſe of Samuel; and having its title from the perſon whoſe ſtory is here principally related. In this ſtory are obſervable the ancient rights of kindred and redemption; and the manner of buying the inheritance of the deceaſed, with other particulars of great note and antiquity. The canonicalneſs of this book was never diſputed; but the learned are not agreed about the epocha of the hiſtory it relates. Ruth the Moabiteſs is found in the genealogy of our Saviour. Matth. i. 5.

RUTILUS. See CYPRINUS, n° 6.

RUTHERGLEN, or by contraction RUGLEN, the head borough of the netherward of Lanarkſhire in Scotland, is ſituated in N. Lat. 55° 51′, and W. Long. 4° 13′; about two miles ſouth-eaſt of Glaſgow, and nine weſt of Hamilton. Few towns in Scotland can lay greater claim to antiquity than Rutherglen. Maitland, in his Hiſtory of the Antiquities of Scotland, vol. i. p. 92. tells us, that it was founded by a king Reuther, from whom it derived its name; and a tradition of the ſame import prevails among the inhabitants. But without laying any ſtreſs on the authority of tradition, which is often falſe and always doubtful, we find, from ſeveral original charters ſtill preſerved, that it was erected into a royal borough by king David I. about the year 1126.

The territory under the juriſdiction of the borough was extenſive, and the inhabitants enjoyed many diſtinguiſhed privileges, which were however gradually wreſted from them, by political influence, in favour of Glaſgow, which in latter times roſe into conſequence by trade and manufactures. The ancient dimenſions of the place are now unknown; but in the fields and gardens towards the eaſt the foundations of houſes are occaſionally diſcovered. It is now of a very reduced ſize, conſiſting but of one principal ſtreet and a few lanes, and containing about 1651 inhabitants.

About 150 yards to the ſouth of the main ſtreet

Rutherglen. is a kind of lane, known by the name of *Dins-dykes*. A circumſtance which bafel the unfortunate queen Mary, immediately after her forces were routed at the battle of Langſide, has ever ſince continued to characteriſe this place with an indelible mark of opprobrium. Her majeſty, during the battle, ſtood on a riſing ground about a mile from Rutherglen. She no ſooner ſaw her army defeated than ſhe took her precipitate flight to the ſouth. Dins-dykes unfortunately lay in her way. Two ruſtics, who were at that inſtant cutting graſs hard by, ſeeing her majeſty fleeing in haſte, rudely attempted to intercept her, and threatened to cut her in pieces with their ſcythes if ſhe preſumed to proceed a ſtep further. Neither beauty, nor even royalty itſelf, can at all times ſecure the unfortunate when they have to do with the unfeeling or the revengeful. Relief however was at hand; and her majeſty proceeded in her flight.

Adjoining to a lane called the *Back-row* ſtood the caſtle of Rutherglen, originally built at a period coeval, it is reported, with the foundation of the town. This ancient fortreſs underwent ſeveral ſieges during the unhappy wars in the days of king Robert Bruce, and it remained a place of ſtrength until the battle of Langſide; ſoon after which it was deſtroyed by order of the regent, to revenge himſelf on the Hamilton family, in whoſe cuſtody it then was. The foundations of the buildings are now eraſed, and the ſite converted into dwelling-houſes and gardens.

The kirk of Rutherglen, an ancient building of the Saxon-Gothic ſtyle, was rendered famous by two tranſactions, in which the fate of Sir William Wallace and his country was deeply concerned. In it a truce was concluded between Scotland and England in the year 1297 (Henry's Life of Wallace, Book VI. verſe 862.), and in it Sir John Monteath bargained with the Engliſh to betray Wallace his friend and companion (Life of Wallace, Book XI. verſe 796). This ancient building, having become incommodious, was, in 1794, pulled down, and one of a modern ſtyle was erected in its place. Buried in the area were found vaſt quantities of human bones, and ſome relics of antiquity.

No borough probably in Britain poſſeſſes a political conſtitution or ſett more free and unembarraſſed than Rutherglen. It was anciently under the influence of a ſelf-elected magiſtracy, many of whom lived at a diſtance from the borough, and who continued long in office without interruption. Negligence on the one hand, and an undue exertion of power on the other, at length excited the burgeſſes, about the middle of the laſt century, to apply an effectual remedy to this evil. The community who, at that period, poſſeſſed the power of reforming the abuſes that had long prevailed in the management of the borough, were much aſſiſted in their exertions by a Mr David Spens town-clerk, a gentleman unbiaſſed by falſe politics, and who was animated with a high degree of true patriotiſm. Great oppoſition was at firſt made to the reform; but the plan adopted by the burgeſſes was wiſely laid, and was proſecuted with unremitting aſſiduity. They were proof againſt the influence and bribery of a party that ſtruggled to continue the old practice; and having at length ſurmounted every difficulty, they formed a new conſtitution or ſett for the borough, which in 1671, was approved of by all the inhabitants of the town, and afterwards inſerted in the records of the general convention of the royal boroughs of Scotland.

Rutherglen, in conjunction with Glaſgow, Renfrew, and Dumbarton, ſends a member to the Britiſh parliament. The fairs of this town are generally well attended, and have long been famous for a great ſhow of horſes, of the Lanarkſhire breed, which are eſteemed the beſt draught-horſes in Britain. The inhabitants of this borough ſtill retain ſome cuſtoms of a very remote antiquity. One of theſe is the making of *Rutherglen faur cakes*. The operation is attended with ſome peculiar rites, which lead us to conclude that the practice is of Pagan origin. An account of theſe rites is given in Ure's Hiſtory of Rutherglen and Kilbride, p. 94.; from whence we have taken the above account of this place, and which we do not heſitate to recommend to the attention of ſuch of our readers as are fond of natural and local hiſtory, being perſuaded that they will find it to be both an uſeful and entertaining performance.

Rutlandſhire. RUTLANDSHIRE, is the leaſt county in England, it being but 40 miles in circumference; in which are two towns, 48 pariſhes, and 3263 houſes. However, for quality it may be compared with any other county; the air being good, and the ſoil fertile both for tillage and paſtures; and it not only affords plenty of corn, but feeds a great number of horned cattle and ſheep. It is well watered with brooks and rivulets; and the principal rivers are the Weland and the Waſh. It is bounded on the eaſt by Lincolnſhire; on the ſouth by the river Weland, which parts it from Northamptonſhire; and on the weſt and north by Leiceſterſhire. It has only two market-towns; namely, Okeham, where the aſſizes and ſeſſions are held, and Uppingham.

RUYSCH (Frederic), one of the moſt eminent anatomiſts of which Holland can boaſt, was born at the Hague in 1638. After making great progreſs at home, he repaired to Leyden, and there proſecuted the ſtudy of anatomy and botany. He ſtudied next at Francker, where he obtained the degree of doctor of phyſic. He then returned to the Hague; and marrying in 1661, dedicated his whole time to the ſtudy of his profeſſion. In 1665 he publiſhed a treatiſe, entitled *Dilucidatio valvularum de variis lymphaticis et lacteis*; which raiſed his reputation ſo high, that he was choſen profeſſor of anatomy at Amſterdam. This honour he accepted with the more pleaſure, becauſe his ſituation at Amſterdam would give him eaſy acceſs to every requiſite help for cultivating anatomy and natural hiſtory. After he ſettled in Amſterdam, he was perpetually engaged in diſſecting and in examining with the moſt inquiſitive eye the various parts of the human body. He improved the ſcience of anatomy by new diſcoveries; in particular, he found out a way to preſerve dead bodies many years from putrefaction. His anatomical collection was curious and valuable. He had a ſeries of fœtuſes of all ſizes, from the length of the little finger to that of a new born infant. He had alſo bodies of full grown perſons of all ages, and a vaſt number of animals almoſt of every ſpecies on the globe, beſides a great many other natural curioſities. Peter the Great of Ruſſia, in his tour through Holland in the year 1698, viſited Ruyſch, and was ſo charmed with his converſation, that he

Ruyſch, Ruyter

paſſed whole days with him; and when the hour of departure came, he left him with regret. He ſet ſo high a value on Ruyſch's cabinet of curioſities, that when he returned to Holland in 1717, he purchaſed it for 30,000 florins, and ſent it to Peterſburgh.

In 1685 he was made profeſſor of medicine, an office which he diſcharged with great ability. In 1728 he got his thigh-bone broken by a fall in his chamber. The year before this misfortune happened he had been deprived of his ſon Henry, a youth of talents, and well ſkilled in anatomy and botany. He had been created a doctor of phyſic, and was ſuppoſed to have aſſiſted his father in his diſcoveries and publications. Ruyſch's family now conſiſted only of his youngeſt daughter. This lady had been early inſpired with a paſſion for anatomy, the favourite ſcience of her father and brother, and had ſtudied it with ſucceſs. She was therefore well qualified to aſſiſt her father in forming a ſecond collection of curioſities in natural hiſtory and anatomy, which he began to make after the emperor of Ruſſia had purchaſed the firſt. Ruyſch is ſaid to have been of ſo healthy a conſtitution, that though he lived to the age of 93, yet during that long period he did not labour under the infirmities of diſeaſe above a month. From the time he broke his thigh he was indeed diſabled from walking without a ſupport; yet he retained his vigour both of mind and body without any ſenſible alteration, till in 1731 his ſtrength at once deſerted him. He died on the 22d of February the ſame year. His anatomical works are printed in 4 vols 4to.

The ſtyle of his writings is ſimple and conciſe, but ſometimes inaccurate. Inſtruction, and not oſtentation ſeems to be his only aim. In anatomy he undoubtedly made many diſcoveries; but from not being ſufficiently converſant in the writings of other anatomiſts, he publiſhed as diſcoveries what had been known before. The academy of ſciences at Paris in 1727 elected him a member in place of Sir Iſaac Newton, who was lately deceaſed. He was alſo a member of the Royal Society of London.

RUYTER (Michael Adrian), a diſtinguiſhed naval officer, was born at Fleſſingue, a town of Zealand, in 1607. He entered on a ſea-faring life when he was only 11 years old, and was firſt a cabin-boy. While he advanced ſucceſſively to the rank of mate, maſter, and captain, he acquitted himſelf with ability and honour in all theſe employments. He repulſed the Iriſh, who attempted to take Dublin out of the hands of the Engliſh. He made eight voyages to the Weſt Indies and ten to Brazil. He was then promoted to the rank of rear admiral, and ſent to aſſiſt the Portugueſe againſt the Spaniards. When the enemy came in ſight, he advanced boldly to meet them, and gave ſuch unqueſtionable proofs of valour as drew from the Portugueſe monarch the warmeſt applauſe. His gallantry was ſtill more conſpicuous before Salee, a town of Barbary. With one ſingle veſſel he ſailed through the roads of that place in defiance of five Algerine Corſairs who came to attack him.

In 1653 a ſquadron of ſeventy veſſels was diſpatched againſt the Engliſh under the command of Van Tromp. Ruyter, who accompanied the admiral in this expedition, ſeconded him with great ſkill and bravery in the three battles which the Engliſh ſo glorioufly won. He was afterwards ſtationed in the Mediterranean, where he captured ſeveral Turkiſh veſſels. In 1659 he received a commiſſion to join the king of Denmark in his war with the Swedes; and he not only maintained his former reputation, but even raiſed it higher. As the reward of his ſervices, the king of Denmark ennobled him and gave him a penſion. In 1661 he ran aſhore a veſſel belonging to Tunis, releaſed 40 Chriſtian ſlaves, made a treaty with the Tuniſians, and reduced the Algerine corſairs to ſubmiſſion. His country as a teſtimony of her gratitude for ſuch illuſtrious ſervices, raiſed him to the rank of vice-admiral and commander in chief. To the latter dignity, the higheſt that could be conferred upon him, he was well intitled by the ſignal victory which he obtained over the combined fleets of France and Spain. This battle was fought in 1672 about the time of the conqueſt of Holland. The fight was maintained between the Engliſh and Dutch with the obſtinate bravery of nations which were accuſtomed to diſpute the empire of the main. Ruyter having thus made himſelf maſter of the ſea, conducted a fleet of Indiamen ſafely into the Texel; thus defending and enriching his country, while it was become the prey of hoſtile invaders. The next year he had three engagements with the fleets of France and England, in which, if poſſible his bravery was ſtill more diſtinguiſhed than ever. D'Eſtrees the French vice-admiral wrote to Colbert in theſe words: "I would purchaſe with my life the glory of De Ruyter." But he did not long enjoy the triumphs which he had ſo honourably won. In an engagement with the French fleet off the coaſt of Sicily, he loſt the day, and received a mortal wound, which put an end to his life in a few days. His corpſe was carried to Amſterdam, and a magnificent monument was there erected by the command of the ſtates-general. The Spaniſh council beſtowed on him the title of duke, and tranſmitted a patent inveſting him with that dignity; but he died before it arrived.

When ſome perſon was congratulating Louis XIV. upon De Ruyter's death, telling him he had now got rid of one dangerous enemy; he replied, "Every one muſt be ſorry at the death of ſo great a man."

RYE, in botany. See SECALE.

Rye-Graſs. See AGRICULTURE, n° 179.

RYE, a town in Suſſex, with two markets on Wedneſdays and Saturdays, but no fair. It is one of the cinque-ports; is a handſome well-built place, governed by a mayor and jurats, and ſends two members to parliament. It has a church built with ſtone, and a town-hall; and conſiſts of three ſtreets, paved with ſtone. One ſide of the town has been walled in, and the other is guarded by the ſea. It has two gates, and is a place of conſiderable trade in the ſhipping way. From thence large quantities of corn are exported, and many of the inhabitants are fiſhermen. It is 34 miles ſouth-eaſt by ſouth of Tunbridge, and 64 on the ſame point from London. The mouth of the harbour is of late choaked up with ſand; but if well opened, it would be a good ſtation for privateers that cruize againſt the French. E. Long. 0. 50. N. Lat. 51. 0.

Ruyter || Rymer.

RYMER (Thomas), Eſq; the author of the *Fœdera*, was born in the north of England, and educated at the grammar ſchool of Northallerton. He was admitted a ſcholar at Cambridge, then became a member of Gray's Inn, and at length was appointed hiſtoriographer to King William in place of Mr Shadwell. He wrote A

View

Rymer & Ryots.

View of the Tragedies of the laſt Age, and afterwards publiſhed a tragedy named *Edgar*. For a critic he was certainly not well qualified, for he wanted candour; nor is his judgment much to be relied on, who could condemn Shakeſpear with ſuch rigid ſeverity. His tragedy will ſhow, that his talents for poetry were by no means equal to thoſe whoſe poems he has publicly cenſured. But though he has no title to the appellation of *poet* or *critic*, as an antiquarian and hiſtorian his memory will long be preſerved. His *Fœdera*, which is a collection of all the public tranſactions, treaties, &c. of the kings of England with foreign princes, is eſteemed one of the moſt authentic and valuable records, and is oftener referred to by the beſt Engliſh hiſtorians than perhaps any other book in the language. It was publiſhed at London in the beginning of the preſent century in 17 volumes folio. Three volumes more were added by Sanderſon after Rymer's death. The whole were reprinted at the Hague in 10 vols in 1739. They were abridged by Rapin in French, and inſerted in Le Clerc's *Bibioth que*, a tranſlation of which was made by Stephen Whatley, and printed in 4 vols 8vo, 1731.

Rymer died 14th December 1713, and was buried in the pariſh church of St Clement's Danes. Some ſpecimens of his poetry are preſerved in the firſt volume of Mr Nichol's Select Collection of Miſcellaneous Poems, 1780.

RYNCHOPS, in ornithology, a genus belonging to the order of anſeres. The bill is ſtraight; and the ſuperior mandible much ſhorter than the inferior, which is truncated at the point. The ſpecies are two, viz. the nigra and fulva, both natives of America.

RYOTS, in the policy of Hindoſtan, the modern name by which the renters of land are diſtinguiſhed. They hold their poſſeſſions by a leaſe, which may be conſidered as perpetual, and at a rate fixed by ancient ſurveys and valuations. This arrangement has been ſo long eſtabliſhed, and accords ſo well with the ideas of the natives, concerning the diſtinction of caſts, and the functions allotted to each, that it has been invariably maintained in all the provinces ſubject either to Mahometans or Europeans; and to both it ſerves as the baſis on which their whole ſyſtem of finance is founded. Ryots in Bengal.

Reſpecting the preciſe mode, however, in which the ryots of Hindoſtan held their poſſeſſions, there is much diverſity of opinion; the chief of which are very impartially delineated in note iv. to the Appendix of Robertſon's Hiſtorical Diſquiſition, &c. concerning India, p. 345. to which we refer ſuch of our readers as are intereſted in this ſubject of finance.

RYSCHIA, in botany: A genus of the monogynia order, belonging to the pentandria claſs of plants; and in the natural method ranking with thoſe that are doubtful. The calyx is pentaphyllous; the corolla is pentapetalous; and the apices turned back, about three times the length of the calyx; the filaments are five, awl-ſhaped, and ſhorter than the petals. The ſeed-veſſel is quadrilocular, and contains many ſeeds. Of this there are two ſpecies, viz. the *Clauſifolia* and *Souroubea*.

RYSWICK, a large village in Holland, ſeated between the Hague and Delft, where the prince of Orange has a palace, which ſtands about a quarter of a mile farther. It is a very noble ſtructure, all of hewn ſtone, of great extent in front, but perhaps not proportionably high. It is adorned with a marble ſtair-caſe, marble floors, and a magnificent terrace. There is a good proſpect of it from the canal between Delft and the Hague. This place is remarkable for a treaty concluded here in 1697 between England, Germany, Holland, France, and Spain. E. Long. 4. 20. N. Lat. 52. 8.

S.

S, or s, the 18th letter and 14th conſonant of our alphabet; the ſound of which is formed by driving the breath through a narrow paſſage between the palate and the tongue elevated near it, together with a motion of the lower jaw and teeth towards the upper, the lips being a little way open; with ſuch a conformation of every part of the mouth and larynx, as renders the voice ſomewhat ſibilous and hiſſing. Its ſound, however, varies; being ſtrong in ſome words, as *this*, *thus*, &c. and ſoft in words which have a final *e*, as *muſe*, *wiſe*, &c. It is generally doubled at the end of words, whereby they become hard and harſh, as in *kiſs*, *loſs*, &c. In ſome words it is ſilent, as *iſle*, *iſland*, *viſcount*, &c. In writing or printing, the long character *ſ* is generally uſed at the beginning and middle of words, but the ſhort *s* at the end.

In abbreviations, S ſtands for *ſocietas* or *ſocius*; as, R. S. S. for *regiæ ſocietatis ſocius*, i. e. fellow of the royal ſociety. In medicinal preſcriptions, S. A. ſignifies *ſecundum artem*, i. e. according to the rules of art: And in the notes of the ancients, S ſtands for *Sextus*; S. P. for *Spurius*; S. C. for *ſenatus conſultum*; S. P. Q. R. for *ſenatus populuſque Romanus*; S. S. S. for *ſtratum ſuper ſtratum*, i. e. one layer above another alternately; S. V. B. E. E. Q. V. for *ſi vales bene eſt, ego quoque valeo*, a form uſed in Cicero's time, in the beginning of letters. Uſed as a numeral S anciently denoted ſeven; in the Italian muſic, S ſignifies *ſolo*: And in books of navigation, S. ſtands for ſouth; S. E. for ſouth-eaſt; S. W. for ſouth-weſt; S. S. E. for ſouth ſouth-eaſt; S. S. W. for ſouth ſouth-weſt &c.

SAAVEDRA (Michael de Cervantes), a celebrated Spaniſh writer, and the inimitable author of Don Quixote, was born at Madrid in the year 1549. From

Saavedra. his infancy he was fond of books; but he applied himſelf wholly to books of entertainment, ſuch as novels and poetry of all kinds, eſpecially Spaniſh and Italian authors. From Spain he went to Italy, either to ſerve Cardinal Aquaviva, to whom he was chamberlain at Rome; or else to follow the profeſſion of a ſoldier, as he did ſome years under the victorious banners of Marco Antonio Colonna. He was preſent at the battle of Lepanto, fought in the year 1571; in which he either loſt his left hand by the ſhot of an harquebus, or had it ſo maimed that he loſt the uſe of it. After this he was taken by the Moors, and carried to Algiers, where he continued a captive five years and a half. Then he returned to Spain, and applied himſelf to the writing of comedies and tragedies; and he compoſed ſeveral, all of which were well received by the public, and acted with great applauſe. In the year 1584 he publiſhed his Galatea, a novel in ſix books; which he preſented to Aſcanio Colonna, a man of high rank in the church, as the firſt fruits of his wit. But the work which has done him the greateſt honour, and will immortalize his name, is the hiſtory of Don Quixote; the firſt part of which was printed at Madrid in the year 1605. This is a ſatire upon books of knight-errantry; and the principal, if not the ſole, end of it was to deſtroy the reputation of theſe books, which had ſo infatuated the greater part of mankind, eſpecially thoſe of the Spaniſh nation. This work was univerſally read; and the moſt eminent painters, tapeſtry-workers, engravers, and ſculptors, have been employed in repreſenting the hiſtory of Don Quixote. Cervantes, even in his lifetime, obtained the glory of having his work receive a royal approbation. As King Philip III. was ſtanding in a balcony of his palace at Madrid, and viewing the country, he obſerved a ſtudent on the banks of the river Manzanares reading in a book, and from time to time breaking off and beating his forehead with extraordinary tokens of pleaſure and delight: upon which the king ſaid to thoſe about him, "That ſcholar is either mad, or reading Don Quixote:" the latter of which proved to be the caſe. But *virtus laudatur et alget*: notwithſtanding the vaſt applauſe his book everywhere met with, he had not intereſt enough to procure a ſmall penſion, but had much ado to keep himſelf from ſtarving. In the year 1615, he publiſhed a ſecond part; to which he was partly moved by the preſumption of ſome ſcribbler, who had publiſhed a continuation of this work the year before. He wrote alſo ſeveral novels; and among the reſt, "The Troubles of Perſiles and Sigiſmunda." He had employed many years in writing this novel, and finiſhed it but juſt before his death; for he did not live to ſee it publiſhed. His ſickneſs was of ſuch a nature, that he himſelf was able to be, and actually was, his own hiſtorian. At the end of the preface to the Troubles of Perſiles and Sigiſmunda, he repreſents himſelf on horſeback upon the road, and a ſtudent, who had overtaken him, engaged in converſation with him: "And happening to talk of my illneſs (ſays he), the ſtudent ſoon let me know my doom, by ſaying it was a dropſy I had got; the thirſt attending which all the water of the ocean, though it were not ſalt, would not ſuffice to quench. Therefore Senor Cervantes, ſays he, you muſt drink nothing at all, but do not forget to eat; for this alone will recover you without any other phyſic. I have been told the ſame by others, anſwered I; but I can no more forbear tippling, than if I were born to do nothing elſe. My life is drawing to an end; and from the daily journal of my pulſe, I ſhall have finiſhed my courſe by next Sunday at the fartheſt.—But adieu, my merry friends all, for I am going to die; and I hope to ſee you ere long in the other world, as happy as heart can wiſh." His dropſy increaſed, and at laſt proved fatal to him; yet he continued to ſay and to write bon mots. He received the laſt ſacrament on the 18th of April 1616; yet the day after wrote a Dedication of the Troubles of Perſiles and Sigiſmunda to the Condé de Lemos. The particular day of his death is not known.

Saba Sabbatarians.

SABA, a Dutch iſland near St Euſtatia in the Weſt Indies. It is a ſteep rock, on the ſummit of which is a little ground, very proper for gardening. Frequent rains, which do not lie any time on the ſoil, give growth to plants of an exquiſite flavour, and cabbages of an extraordinary ſize. Fifty European families, with about one hundred and fifty ſlaves, here raiſe cotton, ſpin it, make ſtockings of it, and ſell them to other colonies for as much as ten crowns* a pair. Throughout America there is no blood ſo pure as that of Saba; the women there preſerve a freſhneſs of complexion, which is not to be found in any other of the Caribbee iſlands. Happy colony! elevated on the top of a rock between the ſky and ſea, it enjoys the benefit of both elements without dreading their ſtorms; it breathes a pure air, lives upon vegetables, cultivates a ſimple commodity, from which it derives eaſe without the temptation of riches: is employed in labours leſs troubleſome than uſeful, and poſſeſſes in peace all the bleſſings of moderation, health, beauty, and liberty. This is the temple of peace from whence the philoſopher may contemplate at leiſure the errors and paſſions of men, who come, like the waves of the ſea, to ſtrike and daſh themſelves on the rich coaſts of America, the ſpoils and poſſeſſion of which they are perpetually contending for, and wreſting from each other: hence may he view at a diſtance the nations of Europe bearing thunder in the midſt of the ocean, and burning with the flames of ambition and avarice under the heats of the tropics; devouring gold without ever being ſatisfied; wading through ſeas of blood to amaſs thoſe metals, thoſe pearls, thoſe diamonds, which are uſed to adorn the oppreſſors of mankind; loading innumerable ſhips with thoſe precious caſks, which furniſh luxury with purple, and from which flow pleaſures, effeminacy, cruelty, and debauchery. The tranquil inhabitant of Saba views this maſs of follies, and ſpins his cotton in peace. Raynal's Hiſtory, vol. iv.

SABÆANS. See SABIANS.

SABAZIA, in Greek antiquity, were nocturnal myſteries in honour of Jupiter Sabazius. All the initiated had a golden ſerpent put in at their breaſts, and taken out at the lower part of their garments, in memory of Jupiter's raviſhing Proſerpina in the form of a ſerpent. There were alſo other feaſts and ſacrifices diſtinguiſhed by this appellation, in honour of Mithras, the deity of the Perſians, and of Bacchus, who was thus denominated by the Sabians, a people of Thrace.

SABBATARIANS, or SEVENTH DAY BAPTISTS, a ſect of anabaptiſts; thus called, becauſe they obſerved the Jewiſh or Saturday-Sabbath, from a perſuaſion that it was never abrogated in the New Teſtament by the inſtitutions of any other.

SABBATH,

Sabbath.

SABBATH, in the Hebrew language, ſignifies *reſt*. The ſeventh day was denominated the *Sabbath*, or *day of reſt*, becauſe that in it God had reſted from all his works which he created and made. From that time the ſeventh day ſeems to have been ſet apart for religious ſervices; and, in conſequence of a particular injunction, was afterwards obſerved by the Hebrews as an holyday. They were commanded to ſet it apart for ſacred purpoſes in honour of the creation, and likewiſe in memorial of their own redemption from Egyptian bondage.

1 Definition.

2 Importance of the inſtitution and early ceremonies.

The importance of the inſtitution may be gathered from the different laws reſpecting it. When the ten commandments were publiſhed from Mount Sinai in tremendous pomp, the law of the Sabbath held a place in what is commonly called the firſt table, and by ſubſequent ſtatutes the violation of it was to be puniſhed with death. Six days were allowed for the uſe and ſervice of man; but the ſeventh day God reſerved to himſelf, and appointed it to be obſerved as a ſtated time for holy offices, and to be ſpent in the duties of piety and devotion. On this day the miniſters of the temple entered upon their week; and thoſe who had attended on the temple ſervice the preceding week went out at the ſame time. New loaves of ſhew-bread were placed upon the golden table, and the old ones taken away. Two lambs for a burnt-offering, with a certain proportion of fine flour, mingled with oil, for a bread-offering, and wine for a libation, were offered. The Sabbath, as all other feſtivals, was celebrated from evening to evening. It began at ſix in the evening on Friday, and ended at the ſame time the next day.

3 Time of its inſtitution.

Concerning the time at which the Sabbath was firſt inſtituted, different opinions have been held. Some have maintained, that the ſanctification of the ſeventh day, mentioned in Gen. ii. is only there ſpoken of διὰ προλήψιν or by anticipation; and is to be underſtood of the ſabbath afterwards enjoined the children of Iſrael at the commencement of the Moſaic diſpenſation. But without entering into a particular examination of all the arguments adduced to ſupport this opinion, a few obſervations, it is preſumed, will be ſufficient to ſhow that it reſts on no ſolid foundation.

It cannot eaſily be ſuppoſed that the inſpired penman would have mentioned the ſanctification of the ſeventh day amongſt the primeval tranſactions, if ſuch ſanctification had not taken place until 2500 years afterwards. Writers, ambitious of that artificial elegance which the rules of criticiſm have eſtabliſhed, often bring together in their narratives events which were themſelves far diſtant, for the ſake of giving form to their diſcourſe; but Moſes appears to have deſpiſed all ſuch flimſy refinements, and to have conſtructed his narrative in great conformity to the ſeries of events.

4 Religious ſervice in the patriarchal age.

From the accounts we have of the religious ſervice practiſed in the patriarchal age, it appears that, immediately after the fall, when Adam was reſtored to favour through a Mediator, a ſtated form of public worſhip was inſtituted, which man was required to obſerve in teſtimony, not only of his dependance on the Creator, but alſo of his *faith* and *hope* in the promiſe made to our firſt parents, and ſeen afar off. Of an inſtitution then ſo grand and important, no circumſtance would be omitted that is neceſſary to preſerve it, or that contributes to render the obſervance of it regular and ſolemn.

Sabbath.

That determined times are neceſſary for the due celebration of divine ſervice, cannot be denied. Such is the conſtitution of man, that he muſt have particular times ſet apart for particular ſervices. He is doomed to toil and labour; to earn his bread in the ſweat of his face; and is capable of performing religious duties only in ſuch a manner as is conſiſtent with his ſituation in the world. If ſtated times for religious ſolemnities had not been enjoined, the conſequence would have been, that ſuch ſolemnities would have been altogether neglected; for experience ſhows, that if mankind were left at liberty when and how often they ſhould perform religious offices, theſe offices would not be performed at all. It is the obſervation of holy times that preſerves the practice of holy ſervices; and without the frequent and regular returns of hallowed days, man would quickly forget the duty which he owes to God, and in a ſhort time no veſtige of religion would be found in the world.

5 Neceſſity of ſtated days for the performance.

6 Objections to the early inſtitution of the Sabbath conſidered.

Among the ordinances which God vouchſafed his ancient people, we find that the pious obſervation of holydays was particularly inſiſted upon; and the Sabbath was enjoined to be kept holy, in the moſt ſolemn manner, and under the ſevereſt penalties. Can it then be ſuppoſed that He would ſuffer mankind, from the creation of the world to the Moſaic era, to remain without an inſtitution ſo expedient it itſelf, and as well fitted to anſwer the end propoſed by it, under the one diſpenſation, as ever it could be under the other? No; we have every imaginable reaſon to conclude, that when religious ſervices were enjoined, religious times were appointed alſo; for the one neceſſarily implies the other.

It is no objection to the early inſtitution of the Sabbath, that there is no mention of it in the hiſtory of the patriarchal age. It would have ſwelled the Bible to a moſt enormous ſize, had the ſacred hiſtorian given a particular account of all the tranſactions of thoſe times; beſides, it would have anſwered no end. When Moſes wrote the book of Geneſis, it was unneceſſary to relate minutely tranſactions and inſtitutions already well known by tradition: accordingly we ſee, that his narrative is everywhere very conciſe, and calculated only to preſerve the memory of the moſt important facts. However, if we take a view of the church-ſervice of the patriarchial age, we ſhall find that what is called the *legal* diſpenſation, at leaſt the liturgic part of it, was no new ſyſtem, but a collection of inſtitutions obſerved from the beginning, and republiſhed in form by Moſes. The Scriptures inform us that Cain and Abel offered ſacrifices; and the account which is given of the acceptance of the one, and the rejection of the other, evidently ſhows that ſtated laws reſpecting the ſervice had then taken place. "In proceſs of time," *at the end of the days*, "Abel brought an offering." Here was *prieſt, altar, matter of ſacrifice, appointed time, motive to ſacrifice, atonement made*, and *accepted*. The diſtinction of animals into clean and unclean before the flood, and Noah's ſacrifice immediately after his deliverance, without any new direction, is an unanſwerable proof of the ſame truth. It is teſtified of Abraham, by God himſelf, that he kept his *charge*, his *commandments*, his *ſtatutes*, and his *laws*. Theſe expreſſions comprehend the various branches, into which the law given at Sinai was divided. They contain the moral precepts, affirmative and negative, the matter of religious ſervice, a body of laws

Sabbath. laws to direct obedience, and to which man was to conform his conduct in every part of duty. Agreeably to this, we find that sacrifices were offered, altars and places of worship consecrated, and the *Sabbath* also mentioned as a well known solemnity, before the promulgation of the law. It is expressly taken notice of at the fall of manna; and the incidental manner in which it is then mentioned, is a convincing proof that the Israelites were no strangers to the institution: for had it been a *new* one, it must have been enjoined in a positive and particular manner, and the nature of it must have been laid open and explained, otherwise the term would have conveyed no meaning.

7 Argument from the general division of time into weeks.

The division of time into *weeks*, or periods of seven days, which obtained so early and almost universally, is a strong indication that *one* day in seven was always distinguished in a particular manner. *Week**, and *seven days*, are in scripture language synonymous terms. God commanded Noah, *seven days* before he entered the ark, to introduce into it all sorts of living creatures. When the waters of the flood began to abate, Noah sent forth a dove, which, finding no rest for the sole of her foot, returned to him. After *seven days* he sent forth the dove a second time, and again she returned to the ark. At the expiration of other *seven days* he let go the dove a third time: and a *week* is spoken of (Gen. xxix.) as a well known space of time.

* שבוע ven.

This septenary division of time has been, from the earliest ages, uniformly observed over all the eastern world. The Israelites, Assyrians, Egyptians, Indians, Arabians, and Persians, have always made use of a week, consisting of seven days. Many vain attempts have been made to account for this uniformity; but a practice so general and prevalent could never have taken place, had not the septenary distribution of time been instituted from the beginning, and handed down by tradition.

From the same source also must the ancient heathens have derived their notions of the sacredness of the seventh day. That they had such notions of it is evident from several passages of the Greek poets quoted by Aristobulus, a learned Jew, by Clement of Alexandria, and Eusebius.

——— ἑβδόμη, ἱερὸν ἦμαρ. Hesiod.
The seventh, the *sacred* day.

Ἑβδόματη δ' ἐπειτα κατηλυθεν, ἱερὸν ἦμαρ. Homer.
Afterwards came the seventh, the *sacred* day.

Again:

Ἑβδόμον ἦμαρ ἐην, καὶ τῳ τετελεσο παντα.
On the *seventh* day all things were *completed*.

Ἑβδοματη δηοι τετελεσμενα παντα τετυκται. Linus.
All things were made *perfect* on the *seventh* day.

That they likewise held the number *seven* in high estimation has been shown by a learned, though sometimes fanciful, author*, with such evidence as to enforce conviction. The Pythagoreans call it the *venerable* number, σεβασμα αξιος, *worthy of veneration*, and held it to be *perfect* and *most proper* to religion. They denominated it *fortune*, and also styled it *voice*, *sound*, *muse*, because, no doubt, *seven* distinct notes comprehend the whole scale of music, beyond which neither voice nor instrument can go, but must return from the seventh, and begin again anew. They likewise designed it τελεσφορος, *leading to the end*.

* Holloway's Originals, vol. ii. p. 60.

Sabbath. *Seven*, in the Hebrew language, is expressed by a word that primarily signifies *fulness*, *completion*, *sufficiency*, and is applied to a *week*, or *seven days*, because that was the *full* time employed in the work of creation; to the *Sabbath*, because on it all things were *completed*; and to an *oath*, because it is *sufficient* to put an end to all strife. This opening of the Hebrew root will enable us to come at the meaning of those expressions of the heathens, and also let us see whence they derived their ideas and modes of speaking, and that the knowledge of the transactions at the creation, though much perverted, was never entirely lost by them.

It has been supposed by some, that the heathens borrowed the notion of the *sacredness* of the seventh day from the Jews. But this opinion will not readily be admitted, when it is considered that the Jews were held in the greatest contempt by the surrounding nations, who derided them no less for their sabbaths than for their circumcision. All sorts of writers ridiculed them on this account. Seneca charged them with spending the seventh part of their time in sloth. Tacitus said, that not only the seventh day, but also the seventh year, was unprofitably wasted. Juvenal brings forward the same charge; and Persius upbraided them with their *recutita sabbata*. Plutarch said that they kept it in honour of Bacchus. Tacitus affirmed, that it was in honour of Saturn; but the most abominable assertion of all is that of Apion, who said that they observed the Sabbath in memory of their being cured on that day of a shameful disease, called by the Egyptians *sabbo*.

Some perceiving the force of this objection have contended, that time was divided into weeks of seven days, that each of the planetary gods, the Sun, Moon, Mercury, Venus, Mars, Jupiter, and Saturn, who were the *Dii majorum gentium*, might have a day appropriated to his service. But if such was the origin of weeks, how came the great and ancient goddess *Tellus* to be omitted? She was worshipped by the early idolaters as well as the other planets, and must surely have been deemed by them as worthy of a particular day set apart to her honour as the planet Saturn, who was long undiscovered, afterwards seen but occasionally, and at all times considered as of malign aspect. (See Remphan.)

Others have supposed, that as the year was divided into lunar months of something more than 28 days, it was natural to divide the month into quarters from the different phases of the moon, which would produce as many weeks of seven days. But this supposition is less tenable than the former. The phases of the moon are not so precisely marked at the quarters as to attract to them any particular notice, nor are the quarterly appearances of one month commonly like those of another. We cannot, therefore, conceive what should have induced the earliest observers of the phases of the moon to divide the month into four parts rather than into three, or five, or seven. Had the ancient week consisted of 14 days, it might have been inferred, with some degree of plausibility, that its length was regulated by the phases of the moon, because the shape of that luminary, at the end of the second quarter, is very precisely marked; but there is nothing which, in the present hypothesis, could have everywhere led mankind to make their weeks consist of seven days. This division of time, therefore, can be accounted for only by admitting the primeval institution

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ſtitution of the Sabbath, as related by Moſes in the book of Geneſis. That inſtitution was abſolutely neceſſary to preſerve among men a ſenſe of religion; and it was renewed to the Jews at the giving of the law, and its obſervance enforced by the ſevereſt penalties. It was accordingly obſerved by them with more or leſs ſtrictneſs in every period of their commonwealth, and there is none of the inſtitutions of their divine lawgiver which, in their preſent ſtate of diſperſion, they more highly honour. They regard it, indeed, with a ſuperſtitious reverence, call it their *ſpouſe*, their *delight*, and ſpeak of it in the moſt magnificent terms. They have often varied in their opinions of the manner in which it ought to be kept. In the time of the Maccabees, they carried their reſpect for the ſabbath ſo very high, that they would not on that day defend themſelves from the attacks of their enemies. But afterwards, they did not ſcruple to ſtand upon their neceſſary defence, although they would do nothing to prevent the enemy from carrying on their operations. When our ſaviour was on earth, it was no ſin to looſe a beaſt from the ſtall, and lead him to water; and if he had chanced to fall into a ditch, they pulled him out: but now it is abſolutely unlawful to give a creature in that ſituation any other aſſiſtance than that of food; and if they lead an animal to water, they muſt take care not to let the bridle or halter hang looſe, otherwiſe they are tranſgreſſors.

3 Strict manner in which the ancient Jews obſerved the Sabbath.

As the law enjoins reſt on that day from all ſervile employments, in order to comply with the injunction, they undertake no kind of work on Friday but ſuch as can eaſily be accompliſhed before evening. In the afternoon they put into proper places the meat that they have prepared to eat the day following. They afterwards ſet out a table covered with a clean cloth, and place bread upon it, which they alſo cover with another cloth; and during the ſabbath the table is never moved out of its place. About an hour before ſunſet, the women light the ſabbath lamps, which hang in the places where they eat. They then ſtretch forth their hands to the light, and pronounce the following benediction. "Bleſſed be thou, O God, king of the world, who haſt enjoined us, that are ſanctified by thy commandments, to light the ſabbath lamp." Theſe lamps are two or more in number, according to the ſize of the chamber in which they are ſuppoſed, and continue to burn during the greateſt part of the night. In order to begin the ſabbath well, they waſh their hands and faces, trim their hair, and pare their nails, beginning at the fourth finger, then going to the ſecond, then the fifth, then the third, and ending with the thumb. If a Jew caſts the parings of his nails to the ground, he is *raſcah*, that is, a *wicked* man; for Satan has great power over thoſe parings of nails; and it ſeems they are of great uſe to the wizzards, who know how to employ them in their enchantments. If he buries them in the earth, he is *tzedic*, that is, a *juſt* man; if he burns them in the fire, he is *chaſid*, that is worthy of honour, an holy man. When they have performed theſe preparatory ceremonies, they repair to the ſynagogue, and enter upon their devotions. As ſoon as prayers begin, the departed ſouls ſpring out of the purgatorial flames, and have liberty to cool themſelves in water while the ſabbath laſts; for which reaſon the Jews prolong the continuance of it as much as they can; and the Rabbins have ſtrictly commanded them not to exhauſt all the water on the ſabbath day, leſt theſe miſerable ſouls ſhould by that means be deprived of the refreſhing element. When they have ended their prayers, they return home, and ſalute one another, by wiſhing a good ſabbath. They then ſit down to table. The maſter of the family takes a cup full of wine, and lifting up his hand, ſays, "Bleſſed be thou, O God, our Lord, king of the world, who haſt created the fruit of the vine.—Bleſſed be thou, O God our Lord, king of the world, who haſt ſanctified us by thy commandments, and given us thy holy ſabbath; and of thy good will and pleaſure haſt left it to us as an inheritance, the memorial of thy works of creation. For it is the beginning of the congregation of ſaints, and the memorial of the coming out of Egypt. And thou haſt alſo choſen us from all other people, and ſanctified us, and with love and pleaſure haſt left thy holy ſabbath an inheritance. Bleſſed be thou, O God, who ſanctified the ſabbath." After this benediction is ended, he drinks, and gives the cup to all that are preſent. He then removes the cloth, and taking bread, ſays, "Bleſſed be thou, O God our Lord, king of the world, who bringeſt bread out of the earth." Then he breaks off a bit, and eats, and alſo gives a piece of it to every one of the company.

2 Mode of obſerving it among the modern Jews.

On the morning of the ſabbath, the Jews do not riſe ſo early as they do at other times. Thinking, the greater pleaſure they take on that day, the more devoutly they keep it. When they come into the ſynagogue, they pray as uſual, only the devotions are ſomewhat longer, being intermingled with pſalmody, in honour of the ſabbath. The pentateuch is then produced, and ſeven ſections of it are read in order by ſeven perſons choſen for the purpoſe. Several leſſons are likewiſe read out of the prophets, which have ſome relation to what was read out of the law. After morning prayers they return to their houſes, and eat the ſecond ſabbath-meal, ſhewing every token of joy, in honour of the feſtival. But if one has ſeen any thing ominous in his ſleep; if he has dreamed that he burnt the book of the law; that a beam has come out of the walls of his houſe; that his teeth have fallen out;—then he faſts until very late at night, for all ſuch dreams are bad ones. In the afternoon they go again to the ſynagogue, and perform the evening ſervice, adding to the ordinary prayers ſome leſſons that reſpect the ſabbath. When the devotional duties are ended, they return home, and light a candle reſembling a torch, and again ſit down to eat. They remain eating until near ſix, and then the maſter of the family takes a cup, and pouring wine into it rehearſes ſome benedictions; after which he pours a little of the wine upon the ground, and ſays, "Bleſſed be thou, O Lord, King of the world, who haſt created the fruit of the vine." Then holding the cup in his left hand, with the right he takes a box of ſweet ſpices, and ſays, "Bleſſed be thou, O Lord God, who haſt created various kinds of ſweet ſpices." He ſmells the ſpices, and holds them out to the reſt, that they may do the ſame. He then takes the cup in his right hand, and going to the candle views the left very narrowly, and pronounces a bleſſing. With the cup in the left hand, he examines the right in the ſame manner. Again, holding the cup in his right hand, he rehearſes another benediction, and at the ſame time pours ſome of the wine on the ground. After this he drinks a little of it, and then hands it about to the reſt of the family, who ſmith what

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Sabbath. what remains. In this manner the ſabbath is ended by the Jews, and they may return to their ordinary employments. Thoſe who meet pay their compliments, by wiſhing one another a happy week.

10 Prohibitions obſerved. The Rabbins have reckoned up nine and thirty primary prohibitions, which ought to be obſerved on the ſabbatic feſtival; but their circumſtances and dependents, which are alſo obligatory, are almoſt innumerable. The 39 articles are, Not to till the ground; to ſow; to reap; to hay; make to bind up ſheaves of corn; to threſh; to winnow; to grind; to ſift meal; to knead the dough; to bake; to ſhear; to whiten; to comb or card wool; to ſpin; to twine or twiſt; to warp; to dye; to tie; to untie; to ſew; to tear or pull in pieces; to build; to pull down; to beat with a hammer; to hunt or fiſh; to kill a beaſt; to flay it; to dreſs it; to ſcrape the ſkin; to tan it; to cut leather; to write; to ſcratch out; to rule paper for writing; to kindle a fire; to extinguiſh it; to carry a thing from place to place; to expoſe any thing to ſale. Theſe are the primary prohibitions, and each of theſe has its proper conſequences, which amount to an incredible number; and the Jews themſelves ſay, that if they could keep but two ſabbaths as they ought, they would ſoon be delivered out of all their troubles.

If a Jew on a journey is overtaken by the ſabbath in a wood, or on the highway, no matter where, nor under what circumſtances, he ſits down; he will not ſtir out of the ſpot. If he falls down in the dirt, he lies there; he will not riſe up. If he ſhould tumble into a privy, he would reſt there: he would not be taken out (A). If he ſees a flea ſkipping upon his clothes, he muſt not catch it. If it bites him, he may only remove it with his hand; he muſt not kill it; but a louſe meets with no ſuch indulgence, for it may be deſtroyed. He muſt not wipe his hands with a towel or cloth, but he may do it very lawfully with a cow's tail. A freſh wound muſt not be bound up on the ſabbath-day; a plaſter that had formerly been applied to a ſore may remain on it; but if it falls off, it muſt not be put on anew. The lame may uſe a ſtaff, but the blind muſt not. Theſe particulars, and a great many more of the ſame nature, are obſerved by the Jews in the ſtricteſt manner. But if any one wiſhes to know more of the practice of that devoted race, he may conſult Buxtorf's *Judaica Synagoga*, chap. x. xi. where he will find a complete detail of their cuſtoms and ceremonies on the ſabbath; and likewiſe ſee the primary prohibitions branched out into their reſpective circumſtances.

11 Inſtitution of Sunday or the Lord's day. As the ſeventh day was obſerved by the Jewiſh church, in memory of the reſt of God after the works of creation, and their own deliverance from Pharaoh's tyranny; ſo the firſt day of the week has always been obſerved by the Chriſtian church, in memory of the reſurrection of Jeſus Chriſt, by which he completed the work of man's redemption on earth, and reſcued him from the dominion of him who has the power of death.

This day was denominated by the primitive Chriſtians the *Lord's day*. It was alſo ſometimes called *Sunday*; which was the name given to it by the heathens, who dedicated it to the ſun. And indeed, although it was originally called *Sunday* by the heathens, yet it may very properly retain that name among Chriſtians, becauſe it is dedicated to the honour of "The true light," which lighteth every man that cometh into the world, of Him who is ſtyled by the prophet "The Sun of righteouſneſs," and who on this day aroſe from the dead. But although it was, in the primitive times, indifferently called the *Lord's day* or *Sunday*, yet it was never denominated the *ſabbath*; a name conſtantly appropriated to Saturday, or the *ſeventh* day, both by ſacred and eccleſiaſtical writers. Sabbath.

12 The mention of it in the New Teſtament accidental; Of the change from the *ſeventh* to the *firſt* day of the week, or even of the inſtitution of the *Lord's day* feſtival, there is no account in the New Teſtament. However, it may be fairly inferred from it, that the firſt day of the week was, in the apoſtolic age, a ſtated time for public worſhip. On this day the apoſtles were aſſembled, when the Holy Ghoſt came down ſo viſibly upon them to qualify them for the converſion of the world. On this day we find St Paul preaching at Troas, when the diſciples came to break bread; and the directions which the ſame apoſtle gives to the Corinthians concerning their contributions for the relief of their ſuffering brethren, plainly allude to their religious aſſemblies on the firſt day of the week.

Thus it would appear from ſeveral paſſages in the New Teſtament, that the religious obſervation of the firſt day of the week is of apoſtolical appointment; and may indeed be very reaſonably ſuppoſed to be among thoſe directions and inſtructions which our bleſſed Lord himſelf gave to his diſciples, during the 40 days between his reſurrection and aſcenſion, wherein he converſed with them, and ſpoke of the things pertaining to the kingdom of God. Still, however, it muſt be owned that thoſe paſſages, although the plaineſt that occur, are not ſufficient to prove the apoſtolical inſtitution of the Lord's day, or even the actual obſervation of it. In order, therefore, to place the matter beyond all controverſy, recourſe muſt be had to eccleſiaſtical teſtimony.

From the conſentient evidence and uniform practice of the primitive church, and alſo from the atteſtation of Pliny, an heathen of no mean figure both in learning and power, we find that the firſt day of the week was obſerved in the earlieſt ages as an holyday or feſtival, in honour of the reſurrection of Chriſt. Now there are but two ſources whence the cuſtom could poſſibly have ariſen. It muſt have been inſtituted either by *human* or *divine* authority: by human authority it was not inſtituted; for there was no general council in thoſe early times, and without the decree of a general council it was impoſſible that any eccleſiaſtical inſtitution could have been univerſally eſtabliſhed at once. It remains, therefore, that it muſt have been inſtituted by divine

13 But nevertheleſs it appears to be of divine origin.

(A) This, it ſeems, was once really the caſe. A Jew of Magdeburg fell into a privy on a Saturday. He might have been taken out; but he told thoſe who offered him their aſſiſtance to give themſelves no trouble, for there he was determined to keep holy the ſabbath day. The biſhop, when he heard of it, reſolved that he ſhould ſanctify the next day alſo in the ſame place; and ſo, betwixt them, the poor Jew loſt his life.

Sabbath. divine authority: and that it really was so, will farther appear from the following considerations. It is certain that the apostles travelled over the greatest part of the world, and planted churches in the remotest parts of it. It is certain also that they were all led by the same *spirit*; and their desire was, that unity and uniformity should be observed in all the churches which they had founded. It is not therefore surprising that, in the primitive times, the same doctrine, the same worship, the same rites and customs, should prevail all over the Christian world; nay, it would have been unaccountable had the case been otherwise. For this reason we may conclude that every custom, universally observed in the early ages of the Christian church, and not instituted by a general council, was of original appointment.

14 Purpose for which the Lord's day was instituted.

As the *Lord's day* is sanctified, that is, *set apart* to Christians for the worship and service of God, their Creator, Redeemer, and Sanctifier, a little consideration will easily discover how it ought to be observed. Although a day separated from worldly business, yet it is in no sense a day of idleness, but a season appropriated to the works of salvation and labours of charity.

15 How it was observed in the primitive times.

In the primitive times this holy day was observed in the most solemn manner. From the monuments of those early ages we learn, that it was spent in a due and constant attendance on all the offices of divine worship. On it they held their religious assemblies, in which the writings of the apostles and prophets were read to the people, and the doctrines of Christianity further pressed upon them by the exhortations of the clergy. Solemn prayers and praises were offered up to God, and hymns sung in honour of Christ; the Lord's supper was constantly celebrated; and collections were made for the maintenance of the clergy and the relief of the poor. On this day they abstained, as much as they could, from bodily labour. They looked upon it as a day of joy and gladness; and therefore all fasting on it was prohibited, even during the season of lent, their great annual fast.—Such was the zeal of those times, that nothing, no not the severest persecutions, hindered them from celebrating holy offices on this day. They were often beset and betrayed, and as often slaughtered in consequence of cruel edicts from emperors, those very emperors for whose happiness and prosperity they always offered up their fervent prayers. For this cause, when they could not meet in the daytime, they assembled in the morning before it was light; and when sick, in exile, or in prison, nothing troubled them more than that they could not attend the service of the church. No trivial pretences were then admitted for any one's absence from public worship; for severe censures were passed upon all who were absent without some urgent necessity. When the empire became Christian, Constantine and his successors made laws for the more solemn observation of the Lord's day. They prohibited all prosecutions and pleadings and other juridical matters to be transacted on it, and also all unnecessary labour; not that it was looked upon as a Jewish sabbath, but because these things were considered as inconsistent with the duties of the festival.

But although the primitive Christians did not indulge themselves in the practice of unnecessary labour or trifling amusements, yet they did not wholly abstain from working, if great necessity required it. The council of *Laodicea* enjoined that men should abstain from work on the Lord's day *if possible*; but if any were found to *judaize*, they were to be censured as great transgressors. So circumspect were the primitive Christians about their conduct on this festival, that on the one hand they avoided all things which tended to profane it, whilst on the other they censured all those who insisted it should be observed with Pharisaical rigour. Sabbath.

16 Advantages resulting from the observation of it.

The primary duty of the Lord's day is *public worship*. The nature and design of the Christian religion sufficiently shows the necessity and importance of assembling for the duties of devotion. The whole scope of Christianity is to bring us to an union with God, which cannot be obtained or preserved without frequent communications with him; and the reasons which show religious intercourse to be the indispensable duty of Christians in a private capacity, will bind it with equal or more force on them considered as a community.

The advantages of public worship, when duly performed, are many and great. There are two, however, which deserve to be considered in a particular manner. It gives Christians an opportunity of openly professing their faith, and testifying their obedience to their Redeemer in the wisest and best manner; and in an age when atheism has arisen to an alarming height, when the Son of God is crucified afresh, and put to open shame, every man, who has any regard for religion, will cheerfully embrace all opportunities of declaring his abhorrence of the vicious courses pursued by those degenerate apostates. He will with pleasure lay hold on every occasion to testify that he is neither afraid nor ashamed to confess the truth; and will think it his indispensable duty openly to disavow the sins of others, that he may not incur the guilt of partaking of them.

Public worship preserves in the minds of men a sense of religion, without which society could not exist. Nothing can keep a body of men together and unite them in promoting the public good, but such principles of action as may reach and govern the heart. But these can be derived only from a sense of religious duties, which can never be so strongly impressed upon the mind as by a constant attendance upon public worship. Nothing can be more weak than to neglect the public worship of God, under the pretence that we can employ ourselves as acceptably to our Maker at home in our closets. Both kinds of worship are indeed necessary; but one debt cannot be paid by the discharge of another. By publish worship every man professes his belief in that God whom he adores, and appeals to Him for his sincerity, of which his neighbour cannot judge. By this appeal he endears himself more or less to others. It creates confidence; it roots in the heart benevolence, and all other Christian virtues, which produce, in common life, the fruits of mutual love and general peace.

People in general are of opinion that the duties of the Lord's day are over when public worship is ended. But they seem to forget for what purposes the day was set apart. It is not only appropriated to the duties of public worship, but also intended to our improvement in the knowledge of the doctrines of Christianity. It is an institution calculated to alleviate the condition of the laborious classes of mankind, and, in

Sabbath. consequence of that, to afford rest to *beasts* also. It is proper, it is necessary, that man should reflect on his condition in the world, that he should examine the state of his soul, and inquire what progress he has made in that work which was given him to do. Those that have children or servants are obliged to look after *their* instruction as well as their own. These are the ends which the institution of Sunday was designed to answer. Every man must allow that these things must be done at some time or other; but unless there be *set* times for doing them, the generality of mankind would wholly neglect them.

Visiting and *travelling* (though very common) are enormous profanations of this holy day. Families are thereby robbed of their *time*; a loss for which no amends can ever be made them: Servants, instead of having leisure to improve themselves in spiritual knowledge, are burdened with additional labour: And in a man of any humanity, it must excite many painful sensations, when he reflects how often the useful horse on that day experiences all the anguish of hunger, torn sides, and battered knees. Every kind of *amusement*, every kind of *common* labour, is an encroachment on the particular duties of the Lord's day; and consequently men profane the day by spending it in any amusements, or undertaking upon it any ordinary employment unless it be a work of absolute necessity.

Sabbath-Breaking, or profanation of the Lord's day, is punished by the municipal laws of England. For, besides the notorious indecency and scandal of permitting any secular business to be publicly transacted on that day in a country professing Christianity, and the corruption of morals which usually follows its profanation, the keeping one day in seven holy, as a time of relaxation and refreshment, as well as for public worship, is of admirable service to a state, considered merely as a civil institution. It humanizes, by the help of conversation and society, the manners of the lower classes; which would otherwise degenerate into a savage ferocity sordid and selfishness of spirit: it enables the industrious workman to pursue his occupation in the ensuing week with health and cheerfulness: it imprints on the minds of the people that sense of their duty to God so necessary to make them good citizens; but which yet would be worn out and defaced by an unremitted continuance of labour, without any stated times of recalling them to the worship of their Maker. And therefore the laws of king Athelstan forbad all merchandizing on the Lord's day, under very severe penalties. And by the statute 27 Hen. VI. c. 5. no fair or market shall be held on the principal festivals, Good-Friday, or any Sunday (except the four Sundays in harvest), on pain of forfeiting the goods exposed to sale. And, since by the statute 1 Car. I. c. 1. no persons shall assemble, out of their own parishes, for any sport whatsoever, upon this day; nor, in their parishes, shall use any bull or bear beating, interludes, plays, or other unlawful exercises or pastimes; on pain that every offender shall pay 3s. 4d. to the poor. This statute does not prohibit, but rather impliedly allows, any innocent recreation or amusement, within their respective parishes, even on the Lord's day, after divine service is over. But by statute 29 Car. II. c. 7. no person is allowed to work on the Lord's day, or use any boat or barge, or expose any goods to sale, except meat in public houses, milk at certain hours, and works of necessity or charity, on forfeiture of 5 s. Nor shall any drover, carrier, or the like, travel upon that day, under pain of 20 s. Sabellians || Sable.

SABELLIANS, a sect of Christians of the 3d century, that embraced the opinions of Sabellius, a philosopher of Egypt, who openly taught that there is but one person in the Godhead.

The Sebellians maintained, that the Word and the Holy Spirit are only virtues, emanations, or functions of the Deity; and held, that he who is in heaven is the Father of all things, that he descended into the virgin, became a child, and was born of her as a son; and that having accomplished the mystery of our salvation, he diffused himself on the apostles in tongues of fire, and was then denominated the *Holy Ghost*. This they explained by resembling God to the sun, the illuminative virtue or quality of which was the Word, and its warming virtue the Holy Spirit. The word, they taught, was darted, like a divine ray, to accomplish the work of redemption; and that being re-ascended to heaven, the influences of the Father were communicated after a like manner to the apostles.

SABIANS, an early sect of idolaters, which continues to this day, and worships the sun, moon, and stars. See Polytheism, n° 10, 11, 12.

SABINA, a province of Italy, in the territories of the church; bounded on the north by Umbria, on the east by Farther Abruzzo, on the south by the Campagna of Rome, and on the west by the patrimony of St Peter. It is 22 miles in length, and almost as much in breadth; watered by several small rivers, and abounding in oil and wine. There is no walled town in it, and Magliano is the principal place.

SABINUS (George), a celebrated Latin poet, born in the electorate of Brandenburg in 1508. His poem *Res gestæ Cæsarum Germanorum*, spread his reputation all over Germany, and procured him the patronage of all the princes who had any regard for polite literature: he was made professor of the belles lettres at Frankfort on the Oder, rector of the new academy of Koningsburg, and counsellor to the elector of Brandenburg. He married two wives, the first of which was the eldest daughter of the famous reformer Melancthon; and died in 1560. His poems are well known, and have been often printed.

SABLE, or *Sable Animal*, in zoology, a creature of the weasel-kind, called by authors *mustela zibellina*. See Mustela, n° 6.

The chase of these animals, in the more barbarous times of the Russian empire, was the employ, or rather task, of the unhappy exiles in Siberia. As that country is now become more populous, the sables have in a great measure quitted it, and retired farther north and east, to live in desert forests and mountains: they live near the banks of rivers, or in the little islands in them; on this account they have, by some, been supposed to be the Σαβήριον of Aristotle (*Hist. An. lib.* viii. *c.* 5.), which he classes with the animals conversant among waters.

At present the hunters of sables form themselves into troops, from five to 40 each: the last subdivide into lesser parties, and each chooses a leader; but there is one that directs the whole: a small covered boat is provided for each party, loaded with provisions, a dog and

Sable. and net for every two men, and a veſſel to bake their bread in: each party has alſo an interpreter for the country they penetrate into. Every party then ſets out according to the courſe their chief points out: they go againſt the ſtream of the rivers, drawing their boats up, till they arrive in the hunting country; there they ſtop, build huts, and wait till the waters are frozen, and the ſeaſon commences: before they begin the chace, their leader aſſembles them, they unite in a prayer to the Almighty for ſucceſs, and then ſeparate: the firſt ſable they take is called *God's ſable*, and is dedicated to the church. Sable.

Then they penetrate into the woods; mark the trees as they advance, that they may know their way back; and in their hunting-quarters form huts of trees, and bank up the ſnow round them: near theſe they lay their traps; then advance farther, and lay more traps, ſtill building new huts in every quarter, and return ſucceſſively to every old one to viſit the traps and take out the game to ſkin it, which none but the chief of the party muſt do: during this time they are ſupplied with proviſions by perſons who are employed to bring it on ſledges, from the places on the road, where they are obliged to form magazines, by reaſon of the impracticability of bringing quantities through the rough country they muſt paſs. The traps are a ſort of pitfall, with a looſe board placed over it, baited with fiſh or fleſh: when ſables grow ſcarce, the hunters trace them in the new-fallen ſnow to their holes; place their nets at the entrance; and ſometimes wait, watching two or three days for the coming out of the animal: it has happened that theſe poor people have, by the failure of their proviſions, been ſo pinched with hunger, that, to prevent the cravings of appetite, they have been reduced to take two thin boards, one of which they applied to the pit of the ſtomach, the other to the back, drawing them tight together by cords placed at the ends: ſuch are the hardſhips our fellow-creatures undergo to ſupply the wantonneſs of luxury.

The ſeaſon of chace being finiſhed, the hunters reaſſemble, make a report to their leader of the number of ſables each has taken; make complaints of offenders againſt their regulations; puniſh delinquents; ſhare the booty; then continue at the head-quarters till the rivers are clear of ice; return home, and give to every church the dedicated furs.

Sable Cape, the moſt ſoutherly province of Nova Scotia, in North America, near which is a fine cod-fiſhery. W. Long. 65. 34. N. Lat. 43. 24.

Sable Iſle is adjoined to this cape, and the coaſts of both are moſt commodiouſly ſituated for fiſheries.

Sable Trade, the trade carried on in the ſkins or furs of ſables; of which the following commercial hiſtory was tranſlated by Mr J. R. Forſter from a Ruſſian performance on that ſubject by Mr Muller.

"*Sable, ſoble*, in Ruſſian; *zobel* in German. Their price varies from 1 l. to 10 l. Sterling, and above: fine and middling ſable-ſkins are without bellies, and the coarſe ones are with them. Forty ſkins make a collection called *zimmer*. The fineſt ſables are ſold in pairs perfectly ſimilar, and are dearer than ſingle ones of the ſame goodneſs; for the Ruſſians want theſe in pairs for facing caps, cloaks, tippets, &c. the blackeſt are reputed the beſt. Sables are in ſeaſon from November to February; for thoſe caught at any other time or the year are ſhort-haired, and then called *nedoſoboli*. The hair of ſables differs in length and quality: the long hairs, which reach far beyond the inferior ones, are called *oſ*; the more a ſkin has of ſuch long hairs, the blacker it is, and the more valuable is the fur; the very beſt have no other but thoſe long and black hairs. *Motchka* is a technical term uſed in the Ruſſian fur-trade, expreſſing the lower part of the long hairs; and ſometimes it comprehends likewiſe the lower and ſhorter hairs: the abovementioned beſt ſable furs are ſaid to have a black motchka. Below the long hairs are, in the greater part of the ſable-furs, ſome ſhorter hairs, called *podoſie*, i. e. under-os; the more podoſie a fur has, it is the leſs valuable: in the better kind of ſables the podoſie has black tips, and a grey or ruſty motchka. The firſt kind of motchka makes the middling kind of ſable furs; the red one the worſt, eſpecially if it has but few os. Between the os and podoſie is a low woolly kind of hair, called *podſada*. The more podſada a fur has, the leſs valuable: for the long hair will, in ſuch caſe, take no other direction than the natural one; for the characters of ſable is, that notwithſtanding the hair naturally lies from the head towards the tail, yet it will lie equally in any direction as you ſtrike your hand over it. The various combinations of theſe characters, in regard to os, motchka, podoſie, and podſada, make many ſpecial diviſions in the goodneſs of furs: beſides this, the furriers attend to the ſize, preferring always, *cæteris paribus*, the biggeſt, and thoſe that have the greateſt gloſs. The ſize depends upon the animal being a male or a female, the latter being always ſmaller. The gloſs vaniſhes in old furs: the freſh ones have a kind of bloomy appearance, as they expreſs it; the old ones are ſaid to have done blooming: the dyed ſables always loſe their gloſs; become leſs uniform, whether the lower hairs have taken the dye or not; and commonly the hairs are ſomewhat twiſted or criſped, and not ſo ſtraight as in the natural ones. Some fumigate the ſkins, to make them look blacker; but the ſmell, and the criſped condition of the long hair, betrays the cheat; and both ways are detected by rubbing the fur with a moiſt linen cloth, which grows black in ſuch caſes.

"The Chineſe have a way of dyeing the ſables, ſo that the colour not only laſts (which the Ruſſian cheats cannot do), but the fur keeps its gloſs, and the criſped hairs only diſcover it. This is the reaſon that all the ſables, which are of the beſt kind, either in pairs or ſeparate, are carried to Ruſſia; the reſt go to China. The very beſt ſables come from the environs of Nertchitſk and Yakutſk; and in this latter diſtrict, the country about the river Ud affords ſometimes ſables, of whom one ſingle fur is often ſold at the rate of 60 or 70 rubles, 12 l. or 14 l. The bellies of ſables, which are ſold in pairs, are about two fingers breadth, and are tied together by 40 pieces, which are ſold from 1 l. to 2 l. Sterling. Tails are ſold by the hundred. The very beſt ſable-furs muſt have their tails; but ordinary ſables are often cropped, and 100 ſold from 4 l. to 8 l. Sterling. The legs or feet of ſables are ſeldom ſold ſeparately; white ſables are rare, and no common merchandize, but bought only as curioſities: ſome are yellowiſh, and are bleached in the ſpring on the ſnow."

Sable || Sacerd.

SABLE, in heraldry, ſignifies "black;" and is borrowed from the French, as are moſt terms in this ſcience: in engraving it is expreſſed by both horizontal and perpendicular lines croſſing each other. Sable or itſelf ſignifies ſorrow, learning, and grief; and ancient heralds will have it, that when it is compounded with

Or	ſignifies	Honour.
Arg.		Fame.
Gul.		Reſpect.
Azu.		Application.
Ver.		Content.
Pur.		Authority.

The occaſion that introduced this colour into heraldry is thus related by Alexander Nesbit, p. 8. The duke of Anjou, king of Sicily, after the loſs of that kingdom, appeared at a tournament in Germany all in black, with his ſhield of that tincture, *ſemé de larmes*, i. e. beſprinkled with drops of water, to repreſent tears, indicating by that both his grief and loſs.

SABLESTAN, or SABLUSTAN, a province of Aſia, in Perſia, on the frontiers of Indoſtan; bounded on the north by Khoraſan; on the eaſt, by the mountains of Balk and Candahar; on the ſouth, by Sageſtan or Segeſtan; and on the weſt, by Heri. It is a mountainous country, very little known to Europeans; nor is it certain which is the capital town.

SABRE, a kind of ſword or ſcimitar, with a very broad and heavy blade, thick at the back, and a little falcated or crooked towards the point. It is the ordinary weapon worn by the Turks, who are ſaid to be very expert in the uſe of it.

SABURRA, in medicine, uſually denotes any collection of half putrid indigeſted matter in the ſtomach and inteſtines, by which the operation of digeſtion is impeded.

SABURRÆ, GRITTS, in natural hiſtory; a genus of foſſils, found in minute maſſes, forming together a kind of powder, the ſeveral particles of which are of no determinate ſhape, nor have any tendency to the figure of chryſtal, but ſeem rudely broken fragments of larger maſſes; not to be diſſolved or diſunited by water, but retaining their figure in it, and not cohering by means of it into a maſs; conſiderably opake, and in many ſpecies fermenting with acids; often fouled with heterogene matters, and not unfrequently taken in the coarſer ſtony and mineral or metalline particles.

Gritts are of various colours, as, 1. The ſtony and ſparry gritts, of a bright or greyiſh white colour. 2. The red ſtony gritts. 3. The green ſtony gritts, compoſed of homogene ſparry particles. 4. The yellow gritt, of which there is only one ſpecies. 5. The black and blackiſh gritts, compoſed of ſtony or talky particles.

SACÆA, a feaſt which the ancient Babylonians and other orientals held annually in honour of the deity Anaitis. The Sacæa were in the Eaſt what the Saturnalia were at Rome, viz. a feaſt for the ſlaves. One of the ceremonies was to chooſe a priſoner condemned to death, and allow him all the pleaſures and gratifications he would wiſh, before he were carried to execution.

SACCADE, in the manege, is a jerk more or leſs violent, given by the horſeman to the horſe, in pulling or twitching the reins of the bridle all on a ſudden and with one pull, and that when a horſe lies heavy upon the hand, or obſtinately arms himſelf. Sacerdotal

This is a correction uſed to make a horſe carry well; but it ought to be uſed diſcreetly, and but ſeldom. || Sacheverel.

SACERDOTAL, ſomething belonging to prieſts. See PRIEST.

SACCULUS, in anatomy, a diminutive of ſaccus, ſignifies a little bag, and is applied to many parts of the body.

SACCHARUM, SUGAR, or the *Sugar-Cane*, in botany: A genus of the digynia order, belonging to the triandria claſs of plants; and in the natural method ranking under the 4th order, *Gramina*. There is no calyx, but a long down; the corolla is bivalved. There is but one ſpecies of this genus, viz. the officina. It is a native of Africa, the Eaſt Indies, and of Brazil; from whence it was introduced into the Weſt India iſlands ſoon after they were ſettled. The ſugar-cane is the glory and the pride of thoſe iſlands. It amply rewards the induſtrious planter, enriches the Britiſh merchant, gives bread to thouſands of manufacturers and ſeamen, and brings an immenſe revenue to the crown. For the proceſs of making ſugar, ſee SUGAR.

Sugar, formerly a luxury, is now become one of the neceſſaries of life. In crop-time every negro on the plantations, and every animal, even the dogs, grow fat. This ſufficiently points out the nouriſhing and healthy qualities of ſugar. It has been alleged, that the eating of ſugar ſpoils the colour of, and corrupts, the teeth: this, however, proves to be a miſtake, for no people on the earth have finer teeth than the negroes in Jamaica. Dr Alſton, formerly profeſſor of botany and materia medica at Edinburgh, endeavoured to obviate this vulgar opinion: he had a fine ſet of teeth, which he aſcribed ſolely to his eating great quantities of ſugar. Externally too it is often uſeful: mixed with the pulp of roaſted oranges, and applied to putrid or ill-diſpoſed ulcers, it proves a powerful corrector.

SACCHI (Andrea), a celebrated painter, born at Rome in 1594. He was the diſciple of Franciſco Albano, whom he afterwards ſurpaſſed in taſte and correctneſs. He diſtinguiſhed himſelf in a very eminent degree by his paintings in freſco; and a ſtrong emulation ſubſiſting between him and Pietro de Cortona, they each arrived at a degree of perfection that neither of them might have known without ſuch a competition. The works of Sacchi have ſuch intrinſic merit, and are finiſhed with ſuch uncommon care and ſkill, as will always ſecure the applauſe of the judicious, and preſerve their true value. He died in 1668.

SACHEVEREL (Dr Henry), a famous clergyman of the Tory faction in the reign of queen Anne; who diſtinguiſhed himſelf by indecent and ſcurrilous ſermons and writings againſt the diſſenters and revolution principles. He owed his conſequence, however, to being indiſcreetly proſecuted by the houſe of lords for his aſſize-ſermon at Derby, and his 5th of November ſermon at St Paul's in 1709; in which he aſſerted the doctrine of non-reſiſtance to government in its utmoſt extent; and reflected ſeverely on the act of toleration. The high and low church parties were very violent at that time; and the trial of Sacheverel inflamed the high-church party to dangerous riots and exceſſes: he was, however, ſuſpended for three years, and his ſermons burned by the common hangman. The Tories being

in

Sack ‖ Sackville.

in adminiſtration when Sacheverel's ſuſpenſion expired, he was freed with every circumſtance of honour and public rejoicing; was ordered to preach before the commons on the 29th of May, had the thanks of the houſe for his diſcourſe, and obtained the valuable rectory of St Andrew's, Holborn.

SACK, a wine uſed by our anceſtors, which ſome have taken to be Rhenish and ſome Canary wine.—Venner, in his *Via Recta ad Vitam Longam*, printed in 1628, ſays that ſack is "completely hot in the third degree, and that ſome affect to drink ſack with ſugar and ſome without; and upon no other ground, as I think, but as it is beſt pleaſing to their palate." He goes on to ſay, "that ſack, taken by itſelf, is very hot and very penetrative; being taken with ſugar, the heat is both ſomewhat allayed, and the penetrative quality thereof alſo regarded." He adds further, that Rhenish, &c. decline after a twelvemonth, but ſack and the other ſtronger wines are beſt when they are two or three years old. It appears to be highly probable that ſack was not a ſweet wine, from its being taken with ſugar, and that it did not receive its name from having a ſaccharine flavour, but from its being originally ſtored in ſacks or hogſheads. It does not appear to have been a French wine, but a ſtrong wine the production of a hot climate. Probably it was what is called dry mountain, or ſome Spaniſh wine of that kind. This conjecture is the more plauſible, as Howell, in his French and Engliſh Dictionary, printed in the year 1650, tranſlates ſack by the words *vin d'Eſpagne, vin ſec*.

Sack of Wool, a quantity of wool containing juſt 22 ſtone, and every ſtone 14 pounds. In Scotland, a ſack is 24 ſtone, each ſtone containing 16 pounds.

Sack of Coarſe Wool, a quantity from one hundred and a half to four hundred weight.

Sacks of Earth, in fortification, are canvas bags filled with earth. They are uſed in making retrenchments in haſte, to place on parapets, or the head of the breaches, &c. to repair them, when beaten down.

SACKBUT, a muſical inſtrument of the wind kind, being a ſort of trumpet, though different from the common trumpet both in form and ſize; it is fit to play a baſs, and is contrived to be drawn out or ſhortened, according to the tone required, whether grave or acute. The Italians call it *trombone*, and the Latins *tuba ductilis*.

SACKVILLE (Thomas, Lord Buckhurſt, and earl of Dorſet), a ſtateſman and poet, the ſon of Richard Sackville, Eſq; of Buckhurſt, in the parish of Withiam in Suſſex, was born in the year 1536. He was ſent to Hurſtmonceux in Oxfordſhire, in the latter end of the reign of Edward VI. whence he removed to Cambridge, where he took a maſter of arts degree, and thence to the Inner Temple. He now applied himſelf to the ſtudy of the law, and was called to the bar. We are told that he commenced poet whilſt at the univerſities, and that theſe his juvenile productions were much admired, none of which, however, have been preſerved.—In the fourth and fifth year of queen Mary, we find him a member of the houſe of commons; about which time, in 1557, he wrote a poetical piece, intitled *The Induction*, or *The Mirror of Magiſtrates*. This last was meant to comprehend all the unfortunate Great from the beginning of Engliſh hiſtory; but the deſign being dropped, it was inſerted in the body of the work. The Mirror of Magiſtrates is formed on a dramatic plan; Sackville in which the perſons are introduced ſpeaking. The Induction is written much in the ſtyle of Spencer, who, with ſome probability, is ſuppoſed to have imitated this author.

In 1561, his tragedy of *Gorboduc* was acted before queen Eliſabeth by the gentlemen of the Inner Temple. This was the firſt tolerable tragedy in our language. The Companion to the Play-houſe tells us, that the three firſt acts were written by Mr Tho. Norton. Sir Philip Sidney, in his Apology for Poetry, ſays, "it is full of ſtately ſpeeches, and well-ſounding phraſes, climbing to the height of Seneca in his ſtyle, &c. Rymer ſpeaks highly in its commendation. Mr Spence, at the inſtigation of Mr Pope, republiſhed it in 1736, with a pompous preface. It is ſaid to be our firſt dramatic piece written in verſe.

In the firſt parliament of this reign, Mr Sackville was member for Suſſex, and for Bucks in the ſecond. In the mean time he made the tour of France and Italy, and in 1566 was impriſoned at Rome, when he was informed of his father's death, by which he became poſſeſſed of a very conſiderable fortune.

Having now obtained his liberty, he returned to England; and being firſt knighted was created Lord Buckhurſt. In 1570 he was ſent ambaſſador to France. In 1586 he was one of the commiſſioners appointed to try the unfortunate Mary queen of Scots; and was the meſſenger employed to report the confirmation of her ſentence, and to ſee it executed. The year following he went ambaſſador to the States General, in conſequence of their complaint againſt the earl of Leiceſter; who, diſliking his impartiality, prevailed on the queen to recal him, and confine him to his houſe. In this ſtate of confinement he continued about 10 months, when Leiceſter dying, he was reſtored to favour, and in 1580 was inſtalled knight of the garter: but the moſt incontrovertible proof of the queen's partiality for lord Buckhurſt appeared in the year 1591, when ſhe cauſed him to be elected chancellor in the univerſity of Oxford, in oppoſition to her favourite Eſſex. In 1598, on the death of the treaſurer Burleigh, lord Buckhurſt ſucceeded him, and by virtue of his office became in effect prime miniſter; and when, in 1601, the earls of Eſſex and Southampton were brought to trial, he ſat as lord high ſteward on that awful occaſion.

On the acceſſion of James I. he was graciouſly received, had the office of lord high treaſurer confirmed to him for life, and was created earl of Dorſet. He continued in high favour with the king till the day of his death; which happened ſuddenly, on the 19th of April 1608, in the council chamber at Whitehall. He was interred with great ſolemnity in Weſtminſter abbey. He was a good poet, an able miniſter, and an honeſt man. From him is deſcended the preſent noble family of the Dorſets. "It were needleſs (ſays Mr Walpole) to add, that he was the patriarch of a race of genius and wit."

SACKVILLE (Charles, earl of Dorſet), a celebrated wit and poet, deſcended from the foregoing, was born in 1637. He was, like Villiers, Rochester, Sedley, &c. one of the libertines of king Charles's court, and ſometimes indulged himſelf in inexcuſable exceſſes. He openly diſcountenanced the violent meaſures of James II. and engaged early for the prince of Orange's

Sacrament. Orange, by whom he was made lord chamberlain of the houſehold, and taken into the privy-council. He died in 1706, and left ſeveral poetical pieces, which, though not conſiderable enough to make a volume by themſelves, may be found among the works of the minor poets, publiſhed in 1749.

SACRAMENT is derived from the Latin word *ſacramentum*, which ſignifies an oath, particularly the oath taken by ſoldiers to be true to their country and general. The words of this oath, according to Polybius, were, *obtemperaturus ſum et facturus quicquid mandabitur ab imperatoribus juxta vires.* The word was adopted by the writers of the Latin church, and employed, perhaps with no great propriety, to denote thoſe ordinances of religion by which Chriſtians came under an obligation, equally ſacred with that of an oath, to obſerve their part of the covenant of grace, and in which they have the aſſurances of Chriſt that he will fulfil his part of the ſame covenant.

Of ſacraments, in this ſenſe of the word, Proteſtant churches admit of but two; and it is not eaſy to conceive how a greater number can be made out from Scripture, if the definition of a ſacrament be juſt which is given by the church of England. By that church, the meaning of the word ſacrament is declared to be "an outward and viſible ſign of an inward and ſpiritual grace given unto us, ordained by Chriſt himſelf as a means whereby we receive the ſame, and a pledge to aſſure us thereof." According to this definition, baptiſm and the Lord's Supper are certainly ſacraments; for each conſiſts of an outward and viſible ſign of what is believed to be an inward and ſpiritual grace; both were ordained by Chriſt himſelf, and by the reception of each does the Chriſtian come under a ſolemn obligation to be true to his divine maſter, according to the terms of the covenant of grace. (See Baptism and *Supper of the Lord.*) The Romaniſts, however, add to this number *confirmation*, *penance*, *extreme unction*, *ordination*, and *marriage*, holding in all ſeven ſacraments; but two of thoſe rites not being peculiar to the Chriſtian church cannot poſſibly be *Chriſtian* ſacraments, in contradiſtinction to the ſacraments or obligations into which men of all religions enter. Marriage was inſtituted from the beginning, when God made man male and female, and commanded them to be fruitful, and multiply and replenish the earth; and penance, as far as it is of the ſame import with repentance, has a place in all religions which teach that God is merciful, and men fallible.—The external ſeverities impoſed upon penitents by the church of Rome (ſee Penance) may indeed be in ſome reſpects peculiar to the diſcipline of that church, though the penances of the Hindoos are certainly as rigid; but none of theſe ſeverities were ordained by Chriſt himſelf as the pledge of an inward and ſpiritual grace; nor do they, like baptiſm and the Lord's Supper, bring men under obligations which are ſuppoſed to be analogous to the meaning of the word *ſacramentum.* Confirmation has a better title to the appellation of a ſacrament than any of the other five popiſh rites of that name, though it certainly was not conſidered as ſuch by the earlieſt writers of the Chriſtian church, nor does it appear to have been ordained by Chriſt himſelf, (ſee Confirmation). Ordination is by many churches conſidered as a very important rite; but as it is not adminiſtered to *all* men, nor has any particular form appropriated to it in the New Teſtament, it cannot be conſidered as a Chriſtian ſacrament conferring grace generally neceſſary to ſalvation. It is rather a form of authoriſing certain perſons to perform certain offices, which reſpect not themſelves but the whole church; and extreme unction is a rite which took its riſe from the miraculous powers of the primitive church vainly claimed by the ſucceeding clergy. (See Ordination and *Extreme Unction.*) Theſe conſiderations ſeem to have ſome weight with the Romiſh clergy themſelves; for they call the euchariſt, by way of eminence, the *holy ſacrament.* Thus to expoſe the holy ſacrament, is to lay the conſecrated hoſt on the altar to be adored.—The proceſſion of the holy ſacrament is that in which this hoſt is carried about the church, or about a town. Sacrament || Sacre.

Numerous as we think the ſacraments of the Romiſh church, a ſect of Chriſtians ſprung up in England early in the current century who increaſed their number.—The founder of this ſect was a Dr Deacon, we think, of Manchester, where the remains of it ſubſiſted very lately, and probably do ſo at preſent. According to theſe men, every *rite* and every *phraſe* in the book called the *Apoſtolical Conſtitutions* were certainly in uſe among the apoſtles themſelves. Still, however, they make a diſtinction between the greater and the leſſer ſacraments. The greater ſacraments are only two, baptiſm and the Lord's ſupper. The leſſer are no fewer than ten, viz. five belonging to baptiſm, *exorciſm*, *anointing with oil*, *the white garment*, *a taſte of milk and honey*, and *anointing with chriſm* or *ointment.* The other five are, *the ſign of the croſs*, *impoſition of hands*, *unction of the ſick*, *holy orders*, and *matrimony.* Of the nature of theſe leſſer ſacraments, or the grace which they are ſuppoſed to confer, our limits will permit us to give no account.—Nor is it neceſſary that we ſhould. The ſect which taught them, if not extinguiſhed, is certainly in its laſt wane. It has produced, however, one or two learned men; and its founder's Full, True, and Comprehenſive View of Chriſtianity, in two Catechiſms, is a work which the Chriſtian antiquary will read with pleaſure for information, and the philoſopher for the materials which it contains for meditation on the workings of the human mind. It was publiſhed in 8vo, in the year 1748.

Congregation of the Holy Sacrament, a religious eſtabliſhment formed in France, whoſe founder was Autherius, biſhop of Bethlehem, and which, in 1644, received an order from Urban VIII. to have always a number of eccleſiaſtics ready to exerciſe their miniſtry among pagan nations, wherever the pope, or congregation *de propaganda*, ſhould appoint.

SACRAMENTARIANS, a general name given to all ſuch as have publiſhed or held erroneous doctrines of the ſacrament of the Lord's Supper. The term is chiefly applied among Roman Catholics, by way of reproach, to the Lutherans, Calviniſts, and other Proteſtants.

SACRAMENTARY, an ancient Romiſh church-book, which contains all the prayers and ceremonies practiſed in the celebration of the ſacraments.

It was wrote by pope Gelaſius, and afterwards reviſed, corrected, and abridged, by St Gregory.

SACRE, or Saker, in ornithology, the name of a ſpecies of falcon, called by authors *falco ſacer*, and differently

Sacred, Sacrifice.

ently described by different authors, but by all agreed to be an extremely bold and active bird. It is a native of the northern regions of Europe; and a variety called by some writers the *spotted partridge hawk* is found at Hudson's bay, North America.

SACRED, something holy, or that is solemnly offered and consecrated to God, with benedictions, unctions, &c.

Kings, prelates, and priests, are reckoned sacred persons; abbots are only blessed.—The deaconhood, subdeaconhood, and priesthood, are all sacred orders, and are said to impress a sacred indelible character. The custom of consecrating kings with holy oil is derived (says Gutlingius) from the Hebrews; among whom, he agrees with Grotius, it was never used but to kings who had not an evident right by succession. He adds, that the Christian emperors never used it before Justin the younger; from whom he takes it to have passed to the Goths, &c.

Sacred is also applied to things belonging to God and the church. Church-lands, ornaments, &c. are held sacred.—The sacred college is that of the cardinals.

Sacred Majesty, is applied to the emperor and to the king of England; yet Loyseau says it is blasphemy. See Majesty. The ancients held a place struck with thunder as sacred. In the civil law, sacred place chiefly denotes that where a person deceased has been interred.

Sacred Elixir. See Elixir.

SACRIFICE, an offering made to God on an altar, by means of a regular minister, as an acknowledgment of his power, and a payment of homage. Sacrifices (though the term is sometimes used to comprehend all the offerings made to God, or in any way devoted to his service and honour) differ from mere oblations in this, that in a sacrifice there is a real destruction or change of the thing offered; whereas an oblation is only a simple offering or gift, without any such change at all: thus, all sorts of tythes, and first fruits, and whatever of men's worldly substance is consecrated to God, for the support of his worship and the maintenance of his ministers, are offerings or oblations: and these, under the Jewish law, were either of living creatures or other things: but sacrifices, in the more peculiar sense of the term, were either wholly or in a part consumed by fire. They have by divines been divided into bloody and unbloody. Bloody sacrifices were made of living creatures; unbloody of the fruits of the earth. They have also been divided into *expiatory*, *impetratory*, and *eucharistical*. The first kind were offered to obtain of God forgiveness of sins; the second, to procure some favour; and the third, to express thankfulness for favours already received. Under one or other of these heads may all sacrifices be arranged; though we are told, that the Egyptians had 666 different kinds, a number surpassing all credibility.

Concerning the origin of sacrifices very various opinions have been held. By many, the Phœnicians are supposed to have been the authors of them; though Porphyry attributes their invention to the Egyptians; and Ovid imagines, from the import of the name *victim* and *hostia*, that no bloody sacrifices were offered till wars prevailed in the world, and nations obtained victories over their enemies. These are mere hypotheses, contradicted by the most authentic records of antiquity, and entitled to no regard. Sacrifice.

By modern deists, sacrifices are said to have had their origin in superstition, which operates much in the same way in every country. It is therefore weak, according to those men, to derive this practice from any particular people; since the same mode of reasoning would lead various nations, without any intercourse with each other, to entertain the same opinions respecting the nature of their gods, and the proper means of appeasing their anger. Men of gross conceptions imagine their deities to be like themselves, covetous and cruel. They are accustomed to appease an injured neighbour by a composition in money; and they endeavour to compound in the same manner with their gods, by rich offerings to their temples and to their priests. The most valuable property of a simple people is their cattle. These offered in sacrifice are supposed to be fed upon by the divinity, and are actually fed upon by his priests. If a crime is committed which requires the punishment of death, it is accounted perfectly fair to appease the deity by offering one life for another; because, by savages, punishment is considered as a debt for which a man may compound in the best way that he can, and which one man may pay for another. Hence, it is said, arose the absurd notions of imputed guilt and vicarious atonement. Among the Egyptians, a white bull was chosen as an expiatory sacrifice to their god Apis. After being killed at the altar, his head was cut off, and cast into the river, with the following execration: "May all the evils impending over those who perform this sacrifice, or over the Egyptians in general, be averted on this head *." * Herodotus, lib. 2.

Had sacrifice never prevailed in the world but among such gross idolaters as worshipped departed heroes, who were supposed to retain in their state of deification all the passions and appetites of their mortal state, this account of the origin of that mode of worship would have been to us perfectly satisfactory. We readily admit, that such mean notions of their gods may have actually led far distant tribes, who could not derive any thing from each other through the channel of tradition, to imagine that beings of human passions and appetites might be appeased or bribed by costly offerings. But we know from the most incontrovertible authority, that sacrifices of the three kinds that we have mentioned were in use among people who worshipped the true God, and who must have had very correct notions of his attributes. Now we think it impossible that such notions could have led any man to fancy that the taking away of the life of a harmless animal, or the burning of a cake or other fruits of the earth in the fire, would be acceptable to a Being self-existent, omnipotent, and omniscient, who can neither be injured by the crimes of his creatures, nor receive any accession of happiness from a thousand worlds.

Sensible of the force of such reasoning as this, some persons of great name, who admit the authenticity of the Jewish and Christian sacrifices, and firmly rely on the atonement made by Christ, are yet unwilling (it is difficult to conceive for what reason) to allow that sacrifices were originally instituted by God. Of this way of thinking were St Chrysostom, Spencer, Grotius, and Warburton, as were likewise the Jews Maimonides, R. Levi,

Sacrifice. Levi, Ben Gerſon, and Abarbanel. The greater part of theſe writers maintain, that ſacrifices were at firſt a human inſtitution; and that God, in order to prevent their being offered to idols, introduced them into his ſervice, though he did not approve of them as good in themſelves, or as proper rites of worſhip. That the infinitely wiſe and good God ſhould introduce into his ſervice improper rites of worſhip, appears to us ſo extremely improbable, that we cannot but wonder how ſuch an opinion ſhould ever have found its way into the minds of ſuch men as thoſe who held it. Warburton's theory of ſacrifice is much more plauſible, and being more lately publiſhed, is worthy of particular examination.

According to this ingenious prelate, ſacrifices had their origin in the ſentiments of the human heart, and in the ancient mode of converſing by action in aid of words. Gratitude to God for benefits received is natural to the mind of man, as well as his bounden duty. * Divine Leg. b. iv. c. 2. "This duty (ſays the biſhop *) was in the moſt early times diſcharged in expreſſive actions, the leaſt equivocal of which was the offerer's bringing the firſt fruits of paſturage or agriculture to that ſequeſtered place where the Deity uſed to be more ſolemnly invoked, at the ſtated times of public worſhip; and there preſenting them in homage, with a demand which ſpoke to this purpoſe. —'I do hereby acknowledge thee, O my God! to be the author and giver of all good: and do now, with humble gratitude, return my warmeſt thanks for theſe thy bleſſings particularly beſtowed upon me."—Things thus devoted became thenceforth ſacred: and to prevent their *deſecration*, the readieſt way was to ſend them to the table of the prieſt, or to conſume them in the fire of the altar. Such, in the opinion of our author, was the origin of euchariſtical ſacrifices. *Impetratory* or *precative* ſacrifices had, he thinks, the ſame origin, and were contrived to expreſs by action an invocation for the continuance of God's favour. "Expiatory ſacrifices (ſays the learned prelate) were in their own nature as intelligible, and in practice as rational, as either of the other two. Here, inſtead of preſenting the firſt fruits of agriculture and paſturage, in corn, wine, oil, and wool, as in the euchariſtical, or a portion of what was to be ſown or otherwiſe propagated, as in the *impetratory*; ſome choſen animal precious to the repenting criminal, who deprecates or is ſuppoſed to be obnoxious to the Deity who is to be appeaſed, was offered up and ſlain at the altar, in an action which, in all languages, when tranſlated into words, ſpeaks to this purpoſe:—'I confeſs my tranſgreſſions at thy footſtool, O my God! and with the deepeſt contrition implore thy pardon; confeſſing that I deſerve death for theſe my offences.'—The latter part of the confeſſion was more forcibly expreſſed by the *action* of ſtriking the devoted animal, and depriving it of life; which, when put into words, concluded in this manner.—'And I own that I myſelf deſerve the death which I now inflict on this animal.'

This ſyſtem of ſacrifice, which his lordſhip thinks ſo well ſupported by the moſt early movements of ſimple nature, we admit to be ingenious, but by no means ſatisfactory. That mankind in the earlier ages of the world were accuſtomed to ſupply the deficiencies of their language by expreſſive geſticulations we are not inclined to controvert: the cuſtom prevails among ſavage nations, or nations half civilized, at the preſent day. His lordſhip, however, is of opinion, and we heartily agree with him, that our firſt parents were inſtructed by God to make articulate ſounds ſignificant of ideas, notions, and things (ſee LANGUAGE, n° 6.), and not left to fabricate a language for themſelves. That this heaven-taught language could be at firſt copious, no man will ſuppoſe who thinks of the paucity of ideas which thoſe who ſpoke it had to expreſs; but when we conſider its origin, we cannot entertain a doubt but that it was preciſe and perſpicuous, and admirably adapted to all the real purpoſes of life. Among theſe purpoſes muſt ſurely be included the worſhip of God as the moſt important of all. Every ſentiment therefore which enters into worſhip, gratitude, invocation, confeſſion, and deprecation, the progenitors of mankind were undoubtedly taught to clothe in words the moſt ſignificant and unequivocal; but we know from Moſes, whoſe divine legation the biſhop ſurely admitted, that Cain and Abel, the eldeſt children of our firſt parents, worſhipped God by the rites of ſacrifice: and can we ſuppoſe that this practice occurred to *them* from their having ſo far forgotten the language taught them by their father, as to be under the neceſſity of denoting by action what they could not expreſs by words? If this ſuppoſition be admitted, it will force another upon us ſtill more extravagant. Even Adam himſelf muſt, in that caſe, have become dumb in conſequence of his fall; for it is not conceivable, that as long as he was able to utter articulate ſounds, and affix a meaning to them, he would ceaſe, in the preſence of his family, to confeſs his ſins, implore forgiveneſs, and expreſs his gratitude to God for all his mercies.

The right reverend writer, as if aware of ſome ſuch objection as this to his theory, contends, that if ſacrifices had ariſen from any other ſource than the light of reaſon, the Scripture would not have been ſilent concerning that ſource; "eſpecially ſince we find Moſes carefully recording what *God* immediately, and not *nature*, taught to Adam and his family. Had the original of ſacrifice, ſays he, been preſcribed, and directly commanded by the Deity, the ſacred hiſtorian could never have omitted the expreſs mention of that circumſtance. The two capital obſervances in the Jewiſh ritual were the SABBATH and SACRIFICES. To impreſs the higheſt reverence and veneration on the *Sabbath*, he is careful to record its divine original: and can we ſuppoſe that, had ſacrifices had the ſame original, he would have neglected to eſtabliſh this truth at the time that he recorded the other, ſince it is of equal uſe and of equal importance? I ſhould have ſaid, indeed, of much greater; for the multifarious *ſacrifices* of the LAW had not only a reference to the *forfeiture* of Adam, but likewiſe prefigured our redemption by Jeſus Chriſt."

But all this reaſoning was foreſeen, and completely anſwered before his lordſhip gave it to the public. It is probable, that though the diſtinction of weeks was well known over all the eaſtern world, the Hebrews, during their reſidence in Egypt, were very negligent in their obſervance of the Sabbath. To enforce a religious obſervance of that ſacred day, it became neceſſary to inform them of the time and occaſion of its firſt inſtitution, that they might keep it holy in memory of the creation; but, in a country like Egypt, the people were in danger of holding ſacrifices rather in too high than too low veneration, ſo that there was not the ſame neceſſity

Sacrifice. ceſſity for mentioning explicitly the early inſtitution of them. It was ſufficient that they knew the divine inſtitution of their own ſacrifices, and the purpoſes for which they were offered. Beſides this, there is reaſon to believe, that, in order to guard the Hebrews from the infections of the heathen, the rite of ſacrificing was loaded with many additional ceremonies at its renewal in the adminiſtration under Moſes. It might, therefore, be improper to relate its original ſimplicity to a rebellious people, who would think themſelves ill-uſed by any additional burdens of trouble or expence, however really neceſſary to their happineſs. Biſhop Warburton ſees clearly the neceſſity of concealing from the Jews the ſpiritual and refined nature of the Chriſtian diſpenſation, leſt ſuch a backſliding people ſhould, from the contemplation of it, have held in contempt their own economy. Thus, he thinks, is the reaſon why the prophets, ſpeaking of the reign of the Meſſiah, borrow their images from the Moſaic diſpenſation, that the people living under that diſpenſation might not diſpiſe it from perceiving its end; and we think the reaſon will hold equally good for their lawgiver concealing from them the ſimplicity of the firſt ſacrifices, leſt they ſhould be tempted to murmur at their own multifarious ritual.

But his lordſhip thinks that ſacrifices had their origin from the light of natural reaſon. We ſhould be glad to know what light natural reaſon can throw upon ſuch a ſubject. That ignorant pagans, adoring as gods departed heroes, who ſtill retained their ſenſual appetites, might naturally think of appeaſing ſuch beings with the fat of fed beaſts, and the perfumes of the altar, we have already admitted; but that Cain and Abel, who knew that the God whom they adored has neither body, parts, nor paſſions; that he created and ſuſtains the univerſe; and that from his very nature he muſt will the happineſs of all his creatures, ſhould be led by the light of natural reaſon to think of appeaſing him, or obtaining favours from him, by putting to death harmleſs animals, is a poſition which no arguments of his lordſhip can ever compel us to admit. That Abel's ſacrifice was indeed accepted, we know; but it was not accepted becauſe it proceeded from the movements of the human mind, and the deficiency of the original language, but becauſe it was offered through faith. The light of natural reaſon, however, does not generate faith, but ſcience; and when it talks of that, its offſpring is abſurdity. "Faith is the ſubſtance of things hoped for, the evidence of things not ſeen," and comes not by reaſoning but by hearing. What things then were they of which Abel had heard, for which he hoped, and in the faith of which he offered ſacrifice? Undoubtedly it was a reſtoration to that immortality which was forfeited by the tranſgreſſion of his parents. Of ſuch redemption an obſcure intimation had been given to Adam in the promiſe that the ſeed of the woman ſhould bruiſe the head of the ſerpent; and it was doubtleſs to impreſs upon his mind in more ſtriking colours the manner in which this was to be done, that bloody ſacrifices were firſt inſtituted †. As long as the import of ſuch rites was thus underſtood, they conſtituted a perfectly rational worſhip, as they ſhowed the people that the wages of ſin is death; but when men ſunk into idolatry, and loſt all hopes of a reſurrection from the dead, the ſlaughtering of animals to appeaſe their deities was a prodigal grofly ſuperfluous. It reſtSacrifice. ed in itſelf without pointing to any further end, and the grovelling worſhippers believed that by their ſacrifices they purchaſed the favour of their deities. When once this notion was entertained, human ſacrifices were ſoon introduced; for it naturally occurred to thoſe who offered them, that what they moſt valued themſelves would be moſt acceptable to their offended gods, (ſee the next article). By the Jewiſh law, theſe abominable offerings were ſtrictly forbidden, and the whole ritual of ſacrifice reſtored to its original purity, though not ſimplicity.

All Chriſtian churches, the Socinian ſocieties or churches, not excepted, have till very lately agreed in believing that the Jewiſh ſacrifices ſerved, amongſt other uſes, for types of the death of Chriſt and the Chriſtian worſhip, (ſee TYPE). In this belief all ſober Chriſtians agree ſtill, whilſt many are of opinion that they were likewiſe fœderal rites, as they certainly were conſidered by the ancient Romans *.

* Tit. Liv. lib. 22. cap. 42.

Of the various kinds of Jewiſh ſacrifices, and the ſubordinate ends for which they were offered a full account is given in the books of Moſes. When an Iſraelite offered a loaf or a cake, the prieſt broke it in two parts; and ſetting aſide that half which he reſerved for himſelf, broke the other into crumbs, poured oil, wine, incenſe, and ſalt upon it, and ſtrewed the whole upon the fire of the altar. If theſe offerings were accompanied with the ſacrifice of an animal, they were thrown upon the victim to be conſumed along with it. If the offerings were of the ears of new corn, they were parched at the fire, rubbed in the hand, and then offered to the prieſt in a veſſel, over which he poured oil, incenſe, wine, and ſalt, and then burnt it upon the altar, having firſt taken as much of it as of right belonged to himſelf.

The principal ſacrifices among the Hebrews conſiſted of bullocks, ſheep, and goats; but doves and turtles were accepted from thoſe who were not able to bring the other: theſe beaſts were to be perfect, and without blemiſh. The rites of ſacrificing were various; all of which are very minutely deſcribed in the books of Moſes.

The manner of ſacrificing among the Greeks and Romans was as follows. In the choice of the victim, they took care that it was without blemiſh or imperfection; its tail was not to be too ſmall at the end; the tongue not black, nor the ears cleft; and that the bull was one that had never been yoked. The victim being pitched upon, they gilt his forehead and horns, eſpecially if a bull, heifer, or cow. The head they alſo adorned with a garland of flowers, a woollen infula or holy fillet, whence hung two rows of chaplets with twiſted ribands: and on the middle of the body a kind of apple, pretty large, hung down on each ſide: the leſſer victims were only adorned with garlands and bundles of flowers, together with white tufts or woollens.

The victims thus prepared were brought before the altar; the leſſer being driven to the place, and the greater led by an halter; which, if they made any ſtruggle, or refuſed to go, the ſacrificers took for an ill omen, and the ſacrifice frequently ſet aſide. The victim then brought was carefully examined, to ſee that there was no defect in it; then the prieſt, clad in his ſacerdotal habit, and accompanied with the ſacrificers and other attendants, and being waſhed and purified according

† See Prieſthood.

Sacrifice. cording to the ceremonies preſcribed, turned to the right hand, and went round the altar, ſprinkling it with meal and holy water, and alſo beſprinkling thoſe who were preſent. Then the crier proclaimed with a loud voice, Who is here? To which the people replied, Many and good. The prieſt then having exhorted the people to join with him by ſaying, Let us pray, confeſſed his own unworthineſs, acknowledging that he had been guilty of divers ſins; for which he begged pardon of the gods, hoping that they would be pleaſed to grant his requeſts, accept the oblations offered them, and ſend them all health and happineſs; and to this general form added petitions for ſuch particular favours as were then deſired. Prayers being ended, the prieſt took a cup of wine; and having taſted it himſelf, cauſed his aſſiſtants to do the like; and then poured forth the remainder between the horns of the victim. Then the prieſt or the crier, or ſometimes the moſt honourable perſon in the company, killed the beaſt, by knocking it down or cutting its throat. If the ſacrifice was in honour of the celeſtial gods, the throat was turned up towards heaven, but if they ſacrificed to the heroes or infernal gods, the victim was killed with its throat towards the ground. If by accident the beaſt eſcaped the ſtroke, leaped up after it, or expired with pain and difficulty, it was thought to be unacceptable to the gods. The beaſt being killed, the prieſt inſpected its entrails, and made predictions from them. They then poured wine, together with frankincenſe, into the fire, to increaſe the flame, and then laid the ſacrifice on the altar; which in the primitive times was burnt whole to the gods, and thence called an *holocauſt*; but in after times, only part of the victim was conſumed in the fire, and the remainder reſerved for the ſacrificers; the thighs, and ſometimes the entrails, being burnt to their honour, the company feaſted upon the reſt. During the ſacrifice, the prieſt, and the perſon who gave the ſacrifice, jointly prayed, laying their hand upon the altar. Sometimes they played upon muſical inſtruments in the time of the ſacrifice, and on ſome occaſions they danced round the altar, ſinging ſacred hymns in honour of the god.

Human SACRIFICES, an abominable practice, about the origin of which different opinions have been formed.—The true account ſeems to be that which we have given in the preceding article. When men had gone ſo far as to indulge the fancy of bribing their gods by ſacrifice, it was natural for them to think of enhancing the value of ſo cheap an *atonement* by the coſt and rarity of the offering; and, oppreſſed with their malady, they never reſted till they had got to that which they conceived to be the moſt precious of all, a human ſacrifice. "It was cuſtomary (ſays Sanchoniathon †), in ancient times, in great and public calamities, before things became incurable, for princes and magiſtrates to offer up in ſacrifice to the avenging dæmons the deareſt of their offſpring," Sanchoniathon wrote of Phœnicia, but the practice prevailed in every nation under heaven of which we have received any ancient account. The Egyptians had it in the early part of their monarchy. The Cretans likewiſe had it, and retained it for a longer time.—The nations of Arabia did the ſame. The people of Dumah, in particular, ſacrificed every year a child, and buried it underneath an altar, which they made uſe of inſtead of an idol; for they did not admit of images. The Perſians buried people alive. Ameſtris, the wife of Xerxes, entombed 12 perſons quick under ground for the good of her ſoul. It would be endleſs to enumerate every city, or every province, where theſe dire practices obtained. The Cyprians, the Rhodians, the Phoceans, the Ionians, thoſe of Chios, Leſbos, Tenedos, all had human ſacrifices. The natives of the Tauric Cherſoneſus offered up to Diana every ſtranger whom chance threw upon their coaſt. Hence aroſe that juſt expoſtulation in Euripides upon the inconſiſtency of the proceeding; wherein much good reaſoning is implied. Iphigenia wonders, as the goddeſs delighted in the blood of men, that every villain and murderer ſhould be privileged to eſcape, may be driven from the threſhold of the temple; whereas, if an honeſt and virtuous man chanced to ſtray thither, he only was ſeized upon, and put to death. The Pelaſgi, in a time of ſcarcity, vowed the tenth of all that ſhould be born to them for a ſacrifice, in order to procure plenty. Ariſtomenes the Meſſenian ſlew 300 noble Lacedemonians, among whom was Theopompus the king of Sparta, at the altar of Jupiter at Ithome. Without doubt the Lacedemonians did not fail to make ample returns; for they were a ſevere and revengeful people, and offered the like victims to Mars. Their feſtival of the Diamaſtigoſis is well known; when the Spartan boys were whipped in the ſight of their parents with ſuch ſeverity before the altar of Diana Orthia, that they often expired under the torture. Phylarchus affirms, as he is quoted by Porphyry, that of old every Grecian ſtate made it a rule, before they marched towards an enemy, to ſolicit a bleſſing on their undertakings by human victims.

The Romans were accuſtomed to the like ſacrifices. They both devoted themſelves to the infernal gods, and conſtrained others to ſubmit to the ſame horrid doom. Hence we read in Titus Livius, that, in the conſulate of Æmilius Paulus and Terentius Varro, two Gauls, a man and a woman, and two in like manner of Greece, were buried alive at Rome in the Ox-market, where was a place under ground, walled round, to receive them; which had before been made uſe of for ſuch cruel purpoſes. He ſays it was a ſacrifice not properly Roman, that is, not originally of Roman inſtitution; yet it was frequently practiſed there, and that too by public authority. Plutarch makes mention of a like inſtance a few years before, in the conſulſhip of Flaminius and Furius. There is reaſon to think, that all the principal captives who graced the triumphs of the Romans, were at the cloſe of that cruel pageantry put to death at the altar of Jupiter Capitolinus. Caius Marius offered up his own daughter for a victim to the Dii Averrunci, to procure ſucceſs in a battle againſt the Cimbri; as we are informed by Dorotheus, quoted by Clemens. It is likewiſe atteſted by Plutarch, who ſays that her name was *Calpurnia*. Marius was a man of a ſour and bloody diſpoſition; and had probably heard of ſuch ſacrifices being offered in the enemy's camp, among whom they were very common, or he might have beheld them exhibited at a diſtance; and therefore murdered what was neareſt, and ſhould have been deareſt to him, to counteract their fearful ſpells, and outdo them in their wicked machinery. Cicero, making mention of this cuſtom being common in Gaul, adds, that it prevailed among that people even at the time

† Apud Euſeb. Præp. Evang. lib. 4.

Sacrifice. time he was ſpeaking: from whence we may be led to infer, that it was then diſcontinued among the Romans. And we are told by Pliny, that it had been, and not very long, been diſcouraged. For there was a law enacted, when Lentulus and Craſſus were conſuls, ſo late as the 657th year of Rome, that there ſhould be no more human ſacrifices: for all that time thoſe horrid rites had been celebrated in broad day without any mark or controul; which, had we not the beſt evidence for the fact, would appear ſcarce credible. And however they may have been diſcontinued for a time, we find that they were again renewed; tho' they became not ſo public, nor ſo general. For not very long after this, it is reported of Auguſtus Cæſar, when Peruſia ſurrendered in the time of the ſecond triumvirate, that beſides multitudes executed in a military manner, he offered up, upon the Ides of March, 300 choſen perſons, both of the equeſtrian and ſenatorial order, at an altar dedicated to the manes of his uncle Julius. Even at Rome itſelf this cuſtom was revived: and Porphyry aſſures us, that in his time a man was every year ſacrificed at the ſhrine of Jupiter Latialis. Heliogabalus offered the like victims to the Syrian deity which he introduced among the Romans. The ſame is ſaid of Aurelian.

The Gauls and the Germans were ſo devoted to this ſhocking cuſtom, that no buſineſs of any moment was tranſacted among them without being prefaced with the blood of men. They were offered up to various gods; but particularly to Heſus, Taranis, and Thautates. Theſe deities are mentioned by Lucan, where he enumerates the various nations who followed the fortunes of Cæſar.

The altars of theſe gods were far removed from the common reſort of men; being generally ſituated in the depth of woods, that the gloom might add to the horror of the operation, and give a reverence to the place and proceeding. The perſons devoted were led thither by the Druids, who preſided at the ſolemnity, and performed the cruel offices of the ſacrifice. Tacitus takes notice of the cruelty of the Hermunduri, in a war with the Catti, wherein they had greatly the advantage; at the cloſe of which they made one general ſacrifice of all that was taken in battle. The poor remains of the legions under Varus ſuffered in ſome degree the ſame fate. There were many places deſtined for this purpoſe all over Gaul and Germany; but eſpecially in the mighty woods of Arduenna, and the great Hercynian foreſt; a wild that extended above 30 days journey in length. The places ſet apart for this ſolemnity were held in the utmoſt reverence, and only approached at particular ſeaſons. Lucan mentions a grove of this ſort near Maſſilia, which even the Roman ſoldiers were afraid to violate, though commanded by Cæſar. It was one of thoſe ſet apart for the ſacrifices of the country.

Claudian compliments Stilicho, that, among other advantages accruing to the Roman armies through his conduct, they could now venture into the awful foreſt of Hercynia, and follow the chaſe in thoſe ſo much dreaded woods, and otherwiſe make uſe of them.

Theſe practices prevailed among all the people of the north, of whatever denomination. The Maſſagetæ, the Scythians, the Getes, the Sarmatians, all the various nations upon the Baltic, particularly the Scevi and Scandinavians, held it as a fixed principle, Sacrifice. that their happineſs and ſecurity could not be obtained but at the expence of the lives of others. Their chief gods were Thor and Woden, whom they thought they could never ſufficiently glut with blood. They had many very celebrated places of worſhip; eſpecially in the iſland Rugen, near the mouth of the Oder; and in Zealand: ſome, too, very famous among the Semnones and Naharvalli. But the moſt reverenced of all, and the moſt frequented, was at Upſal; where there was every year a grand celebrity, which continued for nine days. During this term they ſacrificed animals of all ſorts: but the moſt acceptable victims, and the moſt numerous, were men. Of theſe ſacrifices none were eſteemed ſo auſpicious and ſalutary as a ſacrifice of the prince of the country. When the lot fell for the king to die, it was received with univerſal acclamations and every expreſſion of joy; and it once happened in the time of a famine, when they caſt lots, and it fell to king Domalder to be the people's victim: and he was accordingly put to death. Olaus Tretelger, another prince, was burnt alive to Woden. They did not ſpare their own children. Harald the ſon of Gunild, the firſt of that name, ſlew two of his children to obtain a ſtorm of wind. "He did not let (ſays Verſtegan) to ſacrifice two of his ſons unto his idols, to the end he might obtain of them ſuch a tempeſt at ſea, as ſhould break and diſperſe the ſhipping of Harald king of Denmark." Saxo Grammaticus mentions a like fact. He calls the king Haquin; and ſpeaks of the perſons put to death as two very hopeful young princes. Another king ſlew nine ſons to prolong his own life; in hopes, perhaps, that what they were abridged of would in great meaſure be added to himſelf. Such inſtances, however, occur not often, but the common victims were without end. Adam Bremenſis, ſpeaking of the awful grove at Upſal, where theſe horrid rites were celebrated, ſays, that there was not a ſingle tree but what was reverenced, as if it were gifted with ſome portion of divinity: and all this becauſe they were ſtained with gore and foul with human putrefaction. The ſame is obſerved by Scheiffer in his account of this place.

The manner in which the victims were ſlaughtered, was diverſe in different places. Some of the Gauliſh nations chined them with a ſtroke of an ax. The Celtæ placed the man who was to be offered for a ſacrifice upon a block, or an altar, with his breaſt upwards, and with a ſword ſtruck him forcibly acroſs the ſternum; then tumbling him to the ground, from his agonies and convulſions, as well as from the effuſion of blood, they formed a judgment of future events. The Cimbri ripped open the bowels; and from them they pretended to divine. In Norway they beat men's brains out with an ox-yoke. The ſame operation was performed in Iceland, by daſhing them againſt an altar of ſtone. In many places they tranſfixed them with arrows. After they were dead, they ſuſpended them upon the trees, and left them to putrefy. One of the writers above quoted mentions, that in his time 70 carcaſes of this ſort were found in a wood of the Scevi. Dithmar of Merſburgh, an author of nearly the ſame age, ſpeaks of a place called Lethra in Zealand, where there were every year 99 perſons ſacrificed to the god Swantewite. During theſe bloody feſtivals a general

joy

Sacrifice. joy prevailed, and banquets were moſt royally ſerved. They fed, caroufed, and gave a looſe to indulgence, which at other times was not permitted. They imagined that there was ſomething myſterious in the number nine: for which reaſon theſe feaſts were in ſome places celebrated every ninth year, in others every ninth month; and continued for nine days. When all was ended, they waſhed the image of the deity in a pool; and then diſmiſſed the aſſembly. Their ſervants were numerous, who attended during the term of their feaſting, and partook of the banquet. At the cloſe of all, they were ſmothered in the ſame pool, or otherwiſe made away with. On which Tacitus remarks, how great an awe this circumſtance muſt neceſſarily inſpire into thoſe who were not admitted to theſe myſteries.

Theſe accounts are handed down from a variety of authors in different ages; many of whom were natives of the countries which they deſcribe, and to which they ſeem ſtrongly attached. They would not therefore have brought ſo foul an imputation on the part of the world in favour of which they were each writing, nor could there be that concurrence of teſtimony, were not the hiſtory in general true.

The like cuſtom prevailed to a great degree at Mexico, and even under the mild government of the Peruvians; and in moſt parts of America. In Africa it is ſtill kept up; where, in the inland parts, they ſacrifice ſome of the captives taken in war to their fetiches, in order to ſecure their favour. Snelgrave was in the king of Dahoome's camp, after his inroad into the countries of Ardra and Whidaw; and ſays, that he was a witneſs to the cruelty of this prince, whom he ſaw ſacrifice multitudes to the deity of his nation.

The ſame abominable worſhip is likewiſe practiſed occaſionally in the iſlands viſited by Captain Cook, and other circumnavigators, in the South Sea. It ſeems indeed to have prevailed in every country at one period of the progreſs of civilization, and undoubtedly had the origin which we have aſſigned to it.

The ſacrifices of which we have been treating, if we except ſome few inſtances, conſiſted of perſons doomed by the chance of war, or aſſigned by lot, to be offered. But among the nations of Canaan, the victims were peculiarly choſen. Their own children, and whatever was neareſt and deareſt to them, were deemed the moſt worthy offering to their god. The Carthaginians, who were a colony from Tyre, carried with them the religion of their mother-country, and inſtituted the ſame worſhip in the parts where they ſettled. It conſiſted in the adoration of ſeveral deities, but particularly of Kronus; to whom they offered human ſacrifices, and eſpecially the blood of children. If the parents were not at hand to make an immediate offer, the magiſtrates did not fail to make choice of what was moſt fair and promiſing, that the god might not be defrauded of his dues. Upon a check being received in Sicily, and ſome other alarming circumſtances happening, Hamilcar without any heſitation laid hold of a boy, and offered him on the ſpot to Kronus; and at the ſame time drowned a number of prieſts, to appeaſe the deity of the ſea. The Carthaginians another time, upon a great defeat of their army by Agathocles, imputed their miſcarriages to the anger of this god, whoſe ſervices had been neglected. Touched with this, and ſeeing the enemy at their gates, they ſeized at once 300 children Sacrifice. of the prime nobility, and offered them in public for a ſacrifice. Three hundred more, being perſons who were ſomehow obnoxious, yielded themſelves voluntarily, and were put to death with the others. The neglect of which they accuſed themſelves, conſiſted in ſacrificing children purchaſed of parents among the poorer ſort, who reared them for that purpoſe, and not ſelecting the moſt promiſing, and the moſt honourable, as had been the cuſtom of old. In ſhort, there were particular children brought up for the altar, as ſheep are fattened for the ſhambles; and they were bought and butchered in the ſame manner. But this indiſcriminate way of proceeding was thought to have given offence. It is remarkable, that the Egyptians looked out for the moſt ſpecious and handſome perſon to be ſacrificed. The Albanians pitched upon the beſt man of the community, and made him pay for the wickedneſs of the reſt. The Carthaginians choſe what they thought the moſt excellent, and at the ſame time the moſt dear to them; which made the lot fall heavy upon their children. This is taken notice of by Silius Italicus in his fourth book.

Kronus, to whom theſe ſacrifices were exhibited, was an oriental deity, the god of light and fire; and therefore always worſhiped with ſome reference to that element. See Phœnicia.

The Greeks, we find, called the deity to whom theſe offerings were made *Agraulos*; and feigned that ſhe was a woman, and the daughter of Cecrops. But how came Cecrops to have any connection with Cyprus? Agraulos is a corruption and tranſpoſition of the original name, which ſhould have been rendered *Uk El Aur*, or *Uk El Aurus*; but has, like many other oriental titles and names, been ſtrangely ſophiſticated, and is here changed to Agraulos. It was in reality the god of light, who was always worſhipped with fire. This deity was the Moloch of the Tyrians and Canaanites, and the Melech of the Eaſt; that is the great and principal god, the god of light, of whom fire was eſteemed a ſymbol; and at whoſe ſhrine, inſtead of viler victims, they offered the blood of men.

Such was the Kronus of the Greeks, and the Moloch of the Phœnicians: and nothing can appear more ſhocking than the ſacrifices of the Tyrians and Carthaginians, which they performed to this idol. In all emergencies of ſtate, and times of general calamity they devoted what was moſt neceſſary and valuable to them for an offering to the gods, and particularly to Moloch. But beſides theſe undetermined times of bloodſhed, they had particular and preſcribed ſeaſons every year, when children were choſen out of the moſt noble and reputable families, as before mentioned. If a perſon had an only child, it was the more liable to be put to death, as being eſteemed more acceptable to the deity, and more efficacious for the general good. Thoſe who were ſacrificed to Kronus were thrown into the arms of a molten idol, which ſtood in the midſt of a large fire, and was red with heat. The arms of it were ſtretched out, with the hands turned upwards, as it were to receive them; yet ſloping downwards, ſo that they dropt from thence into a glowing furnace below. To other gods they were otherwiſe ſlaughtered, and, as it is implied, by the very hands of their parents. What can be more horrid

Sacrifice. horrid to the imagination, than to ſuppoſe a father leading the dearest and his ſons to ſuch an infernal ſhrine? or a mother the moſt engaging and affectionate of her daughters, juſt riſing to maturity, to be ſlaughtered at the altar of Aſtaroth or Baal? Juſtin deſcribes this unnatural cuſtom very pathetically: *Quippe homines, ut victimas, immolabant: at impuberes (quæ ætas apud omnes miſericordiam provocat) aris admovebant; quorum fungine eorum ſuffuentes, pro quorum vitâ Dii rogari maxime ſolent.* Such was their blind zeal, that this was continually practiſed; and ſo much of natural affection ſtill left unextinguiſhed, as to render the ſcene ten times more ſhocking from the tenderneſs which they ſeemed to expreſs. They embraced their children with great fondneſs, and encouraged them in the gentleſt terms, that they might not be appalled at the ſight of the helliſh proceſs; begging of them to ſubmit with cheerfulneſs to this fearful operation. If there was any appearance of a tear riſing, or a cry unawares eſcaping, the mother ſmothered it with her kiſſes, that there might not be any ſhow of backwardneſs or conſtraint, but the whole be a free-will offering. Theſe cruel endearments over, they ſtabbed them to the heart, or otherwiſe opened the ſluices of life; and with the blood warm, as it ran, beſmeared the altar and the grim viſage of the idol. Theſe were the cuſtoms which the Iſraelites learned of the people of Canaan, and for which they are upbraided by the Pſalmiſt: "They did not deſtroy the nations, concerning whom the Lord commanded them; but were mingled among the heathen, and learned their works: yea, they ſacrificed their ſons and their daughters unto devils, and ſhed innocent blood, even the blood of their ſons and of their daughters, whom they ſacrificed unto the idols of Canaan; and the land was polluted with blood. Thus were they defiled with their own works, and went a-whoring with their own inventions."

Theſe cruel rites, practiſed in ſo many nations, made Plutarch debate with himſelf. "Whether it would not have been better for the Galatæ, or for the Scythians, to have had no tradition or conception of any ſuperior beings, than to have formed to themſelves notions of gods who delighted in the blood of men; of gods, who eſteemed human victims the moſt acceptable and perfect ſacrifice? Would it not (ſays he) have been more eligible for the Carthaginians to have had the atheiſt Critias, or Diagoras, their lawgiver, at the commencement of their polity, and to have been taught, that there was neither god nor demon, than to have ſacrificed, in the manner they were wont, to the god which they adored? Wherein they acted, not as the perſon did whom Empedocles deſcribes in ſome poetry, where he expoſes this unnatural cuſtom. The fire there with many idle vows offers up unwittingly his ſon for a ſacrifice; but the youth was ſo changed in feature and figure, that his father did not know him. Theſe people uſed, knowingly and wilfully, to go through this bloody work, and ſlaughter their own offſpring. Even they who were childleſs would not be exempted from this curſed tribute; but purchaſed children, at a price, of the poorer ſort, and put them to death with as little remorſe as one would kill a lamb or a chicken. The mothers, who ſacrificed the child, ſtood by, without any ſeeming ſenſe of what they was loſing, and without uttering a groan. If a ſigh did by chance eſcape, ſhe loſt all the honour which ſhe propoſed to herſelf in the offering, and the child was notwithſtanding ſlain. All the time of this ceremony, while the children were murdering, there was a noiſe of clarions and tabors ſounding before the idol, that the cries and ſhrieks of the victims might not be heard. "Tell me now (ſays Plutarch) if the monſters of old, the Typhons, and the giants, were to expel the gods, and to rule the world in their ſtead; could they require a ſervice more horrid than theſe infernal rites and ſacrifices?"

Sacrilege Sadducees.

SACRILEGE, SACRILEGIUM, the crime of profaning ſacred things, or things devoted to God; or of alienating to laymen, or common purpoſes, what was given to religious perſons and pious uſes.

SACRISTAN, a church-officer, otherwiſe called SEXTON.

SACRISTY, in church hiſtory, an apartment in a church where the ſacred utenſils were kept, being the ſame with our VESTRY.

SADDLE, is a ſeat upon a horſe's back, contrived for the conveniency of the rider.

A hunting-ſaddle is compoſed of two bows, two bands, fore-bolſters, pannels, and ſaddle-ſtraps; and the great ſaddle has, beſides theſe parts, corks, hind-bolſters, and a trouſſequin.

The pommel is common to both.

SADDUCEES, were a famous ſect among the ancient Jews, and conſiſted of perſons of great quality and opulence. Reſpecting their origin there are various accounts and various opinions. Epiphanius, and after him many other writers, contend, that they took their riſe from Doſitheus a ſectary of Samaria, and their name from the Hebrew word צדק *tzdk* or *juſtice*, from the great juſtice and equity which they ſhowed in all their actions; a derivation which neither ſuits the word *Sadducee* nor the general character of the ſect. They are thought by ſome to be to have been Samaritans; but this is by no means probable, as they always attended the worſhip and ſacrifices at Jeruſalem and never at Gerizzim.

In the Jewiſh Talmud we are told that the Sadducees derived their name from *Sadoc*, and that the ſect aroſe about 260 years before Chriſt in the time of Antigonus of Socho, preſident of the Sanhedrim at Jeruſalem, and teacher of the law in the principal divinity ſchool of that city. He had often in his lectures, it ſeems, taught his ſcholars, that they ought not to ſerve God as ſlaves do their maſters, from the hopes of a reward, but merely out of filial love for his own ſake; from which Sadoc and Baithus inferred that there were no rewards at all after this life. They therefore ſeparated from their maſter, and taught that there was no reſurrection nor future ſtate. This new doctrine quickly ſpread, and gave riſe to the ſect of Sadducees, which in many reſpects reſembled the EPICUREANS.

Dr Prideaux thinks, that the Sadducees were at firſt no more than what the Caraites are now; that is, they would not receive the traditions of the elders, but ſtuck to the written word only; and the Phariſees being great promoters of thoſe traditions, hence theſe two ſects became directly oppoſite to each other. See *Prideaux's Conn.* part. i b. 2 and 3. and ſee alſo PHARISEES and CARAITES.

Afterwards the Sadducees imbibed other doctrines, which

Sadducees. which rendered them a ſect truly impious; for they denied the reſurrection of the dead, and the exiſtence of angels, and of the ſpirits or ſouls of men departed (Mat. xxii. 23. Acts xxiii. 8.) They held, that there is no ſpiritual being but God only; that as to man, this world is his all. They did not deny but that we had reaſonable ſouls: but they maintained this ſoul was mortal; and, by a neceſſary conſequence, they denied the rewards and puniſhments of another life. They pretended alſo, that what is ſaid of the exiſtence of angels, and of a future reſurrection, are nothing but illuſions. St Epiphanius, and after him St Auſtin, have advanced, that the Sadducees denied the Holy Ghoſt. But neither Joſephus nor the evangeliſts accuſe them of any error like this. It has been alſo imputed to them, that they thought God corporeal, and that they received none of the prophecies.

It is pretty difficult to apprehend how they could deny the being of angels, and yet receive the books of Moſes, where ſuch frequent mention is made of angels and of their appearances. Grotius and M. Le Clerc obſerve, that it is very likely they looked upon angels, not as particular beings, ſubſiſting of themſelves, but as powers, emanations, or qualities, inſeparable from the Deity, as the ſun-beams are inſeparable from the ſun. Or perhaps they held angels not to be ſpiritual but mortal; juſt as they thought that ſubſtance to be which animates us and thinks in us. The ancients do not tell us how they ſolved this difficulty, that might be urged againſt them from ſo many paſſages of the Pentateuch, where mention is made of angels.

As the Sadducees acknowledged neither puniſhments nor recompenſes in another life ſo they were inexorable in their chaſtiſing of the wicked. They obſerved the law themſelves, and cauſed it to be obſerved by others, with the utmoſt rigour. They admitted of none of the traditions, explications, or modifications, of the Phariſees; they kept only to the text of the law; and maintained, that only what was written was to be obſerved.

The Sadducees are accuſed of rejecting all the books of Scripture except thoſe of Moſes; and to ſupport this opinion, it is obſerved, that our Saviour makes uſe of no Scripture againſt them, but paſſages taken out of the Pentateuch. But Scaliger produces good proofs to vindicate them from this reproach. He obſerves, that they did not appear in Iſrael till after the number of the holy books were fixed; and that if they had been to chooſe out of the canonical Scriptures, the Pentateuch was leſs favourable to them than any other book, ſince it often makes mention of angels and their apparition. Beſides, the Sadducees were preſent in the temple and at other religious aſſemblies, where the books of the prophets were read indifferently as well as thoſe of Moſes. They were in the chief employs of the nation, many of them were even prieſts. Would the Jews have ſuffered in theſe employments perſons that rejected the greateſt part of their Scriptures? Menaſſe-ben-Iſrael ſays expreſsly, that indeed they did not reject the prophets, but that they explained them in a ſenſe very different from that of the other Jews.

Joſephus aſſures us, that they denied deſtiny or fate; alleging, that theſe were only ſounds void of ſenſe, and that all the good or evil that happens to us is in conſequence of the good or evil ſide we have taken, by the free choice of our will. They ſaid alſo, that God was far removed from doing or knowing evil, and that man was the abſolute maſter of his own actions. This was roundly to deny a providence; and upon this footing I know not, ſays F. Calmet, what could be the religion of the Sadducees, or what influence they could aſcribe to God in things here below. However, it is certain they were not only tolerated among the Jews, but that they were admitted to the high-prieſthood itſelf. John Hircanus, high-prieſt of that nation, ſeparated himſelf in a ſignal manner from the ſect of the Phariſees, and went over to that of Sadoc. It is ſaid alſo, he gave ſtrict command to all the Jews, on pain of death, to receive the maxims of this ſect. Ariſtobulus and Alexander Jannæus, ſon of Hircanus, continued to favour the Sadducees; and Maimonides aſſures us, that under the reign of Alexander Jannæus, they had in poſſeſſion all the offices of the Sanhedrim, and that there only remained of the party of the Phariſees, Simon the ſon of Secra. Caiaphas, who condemned Jeſus Chriſt to death, was a Sadducee (Acts, v. 17. iv. 1.); as alſo Ananus the younger, who put to death St James the brother of our Lord. At this day, the Jews hold as heretics that ſmall number of Sadducees that are to be found among them. See upon this matter *Serrar. Trihæreſ. Menaſſe ben-Iſrael, De Reſurrectione mortuorum; Basnage's Hiſtory of the Jews*, &c.; and *Calmet's Diſſertation upon the Sects of the Jews* before *the Commentary of St Mark*.

Sadducees.

The ſect of the Sadducees was much reduced by the deſtruction of Jeruſalem, and by the diſperſion of the Jews; but it revived afterwards. At the beginning of the third century it was ſo formidable in Egypt, that Ammonim, Origen's maſter, when he ſaw them propagate their opinions in that country, thought himſelf obliged to write againſt them, or rather againſt the Jews, who tolerated the Sadducees, though they denied the fundamental points of their religion. The emperor Juſtinian mentions the Sadducees in one of his novels, baniſhes them out of all the places of his dominions, and condemns them to the ſevereſt puniſhments, as people that maintained atheiſtical and impious tenets; denying the reſurrection and the laſt judgment. Annus, or Ananus, a diſciple of Juda, ſon of Nachman, a famous rabbin of the 8th century, declared himſelf, as it is ſaid, in favour of the Sadducees, and ſtrenuouſly protected them againſt their adverſaries. They had alſo a celebrated defender in the 12th century, in the perſon of Alpharag a Spaniſh rabbin. This doctor wrote againſt the Phariſees, the declared enemies of the Sadducees; and maintained by his public writings, that the purity of Judaiſm was only to be found among the Sadducees; that the traditions avowed by the Phariſees were uſeleſs; and that the ceremonies, which they had multiplied without end, were an unſupportable yoke. The rabbi Abraham-ben-David Italleri replied to Alpharag, and ſupported the ſect of the Phariſees by two great arguments, that of their univerſality and that of their antiquity. He proved their antiquity by a continued ſucceſſion from Adam down to the year 1167; and their univerſality, becauſe the Phariſees are ſpread all the world over, and are found in all the ſynagogues. There are ſtill Sadducees in Africa and in ſeveral other places. They deny the immortality of the ſoul, and the

Sadler || Saffron.

the reſurrection of the body: but they are rarely found, at leaſt there are but few who declare themſelves for theſe opinions.

SADLER (John), was deſcended from an ancient family in Shropſhire; born in 1615; and educated at Cambridge, where he became eminent for his great knowledge in the oriental languages. He removed to Lincoln's-Inn, were he made no ſmall progreſs in the ſtudy of the law: and in 1644 was admitted one of the maſters in chancery, as alſo one of the two maſters of requeſts. In 1649 he was choſen town-clerk of London and the ſame year publiſhed his *Rights of the kingdom*. He was greatly eſteemed by Oliver Cromwell, by whoſe ſpecial warrant he was continued a maſter in Chancery, when their number was reduced to ſix. By his intereſt it was that the Jews obtained the privilege of building for themſelves a ſynagogue in London. In 1658 he was made member of parliament for Yarmouth; and next year was appointed firſt commiſſioner under the great ſeal with Mr Taylor, Mr Whitelocke, and others, for the probate of wills. In 1660 he publiſhed his *Olbia*. Soon after the Reſtoration, he loſt all his employments. In the fire of London in 1666, he was a great ſufferer; which obliged him to retire to his ſeat of Warmwell in Dorſetſhire, where he lived in a private manner till 1674, when he died.

SADOC, a famous Jewiſh rabbi, and founder of the ſect of the SADDUCEES.

SADOLET (James), a polite and learned cardinal of the Romiſh church, born at Modena in 1477. Leo X. made him and Peter Bembus his ſecretaries, an office for which they were both well qualified; and Sadolet was ſoon after made biſhop of Carpentras, near Avignon: he was made a cardinal in 1536 by Paul III. and employed in ſeveral negociations and embaſſies. He died in 1547, not without the ſuſpicion of poiſon, for correſponding too familiarly with the Proteſtants, and for teſtifying too much regard for ſome of their doctors. His works, which are all in Latin, were collected in 1607 at Mentz, in one volume 8vo. All his contemporaries ſpoke of him in the higheſt terms.

SAFE-GUARD, a protection formerly granted to a ſtranger who feared violence from ſome of the king's ſubjects for ſeeking his right by courſe of law.

Safe Conduct, is a ſecurity given by a prince under the great ſeal, to a ſtranger for his *ſafe-coming* into and paſſing out of the realm; the form whereof is in *Reg. Orig.* 25. There are letters of ſafe conduct which muſt be enrolled in chancery; and the perſons to whom granted muſt have them ready to ſhow; and touching which there are ſeveral ſtatutes. See PREROGATIVE.

SAFFRON, in the materia medica, is formed of the ſtigmata of the crocus officinalis *, dried on a kiln, and preſſed together into cakes. Of this there are two kinds, the Engliſh and Spaniſh; of which the latter is by far the moſt eſteemed. Saffron is principally cultivated in Cambridgeſhire, in a circle of about ten miles diameter. The greateſt part of this tract is an open level country, with few inclоſures; and the cuſtom there is, as in moſt other places, to crop two years, and let the land be fallow the third. Saffron is generally planted upon fallow-ground, and, all others things being alike, they prefer that which has borne barley the year before.

* See Crocus.

Saffron.

The ſaffron ground is ſeldom above three acres, or leſs than one; and in chooſing, the principal thing they have regard to is, that they be well expoſed, the ſoil not poor, nor a very ſtiff clay, but a temperate dry mould, ſuch as commonly lies upon chalk, and is of an hazel colour; though, if every thing elſe anſwers, the colour of the mould is pretty much neglected.

The ground being made choice of, about Lady-day or the beginning of April, it muſt be carefully ploughed, the furrows being drawn much cloſer together, and deeper if the ſoil will allow it, than is done for any kind of corn; and accordingly the charge is greater.

About five weeks after, during any time in the month of May, they lay between 20 and 30 loads of dung upon each acre, and having ſpread it with great care, they plough it in as before. The ſhorteſt rotten dung is the beſt; and the farmers, who have the conveniency of making it, ſpare no pains to make it good, being ſure of a proportionable price for it. About midſummer they plough a third time, and between every 16 feet and an half they leave a broad furrow or trench, which ſerves both as a boundary to the ſeveral parcels, and for throwing the weeds into at the proper ſeaſon. The time of planting is commonly in the month of July. The only inſtrument uſed at this time is a ſmall narrow ſpade, commonly called a *ſpit-ſhovel*. The method is this: One man with his ſhovel raiſes about three or four inches of earth, and throws it before him about ſix or more inches. Two perſons, generally women, follow with roots, which they place in the fartheſt edge of the trench made by the digger, at about three inches from each other. As ſoon as the digger has gone once the breadth of the ridge, he begins again at the other ſide; and, digging as before, covers the roots laſt ſet, which makes room for another row of roots at the ſame diſtance from the firſt that they are from one another. The only dexterity neceſſary in digging is, to leave ſome part of the firſt ſtratum of earth untouched, to lie under the roots; and, in ſetting, to place the roots directly upon their bottom. The quantity of roots planted on an acre is generally about 16 quarters, or 128 buſhels. From the time of planting till the beginning of September, or ſometimes later, there is no more labour required; but at that time they begin to vegetate, and are ready to ſhow themſelves above ground, which may be known by digging up a few of the roots. The ground is then to be pared with a ſharp hoe, and the weeds raked into the furrows, otherwiſe they would hinder the growth of the ſaffron. In ſome time after, the flowers appear.

They are gathered before they are full blown, as well as after, and the proper time for it is early in the morning. The owners of the ſaffron fields get together a ſufficient number of hands, who pull off the whole flowers, and throw them by handfuls into a baſket, and ſo continue till about 11 o'clock. Having then carried home the flowers, they immediately fall to picking out the ſtigmata or chives, and together with them a pretty large proportion of the ſtylus itſelf, or ſtring to which they are attached: the reſt of the flower they throw away as uſeleſs. Next morning they return to the field, without regarding whether the weather be wet or dry; and ſo on daily, even on Sundays, till the whole crop is gathered.—The next labour is to dry the chives on the kiln. The kiln is built upon a three-

thave-

plank, that it may be moved from place to place. It is ſupported by four ſhort legs; the outſide conſiſts of eight pieces of wood of three inches thick, in form of a quadrangular frame, about 12 inches ſquare at the bottom on the inſide, and 22 on the upper part; which laſt is likewiſe the perpendicular height of it. On the ſouth ſide is left a hole of about eight inches ſquare, and four inches above the plank, through which the fire is put in; over all the reſt laths are laid pretty thick, cloſe to one another, and nailed to the frame already mentioned. They are then plaſtered over on both ſides, as are alſo the planks at bottom, very thick, to ſerve for an hearth. Over the mouth is laid a hair-cloth, fixed to the edges of the kiln, and likewiſe to two rollers or moveable pieces of wood, which are turned by wedges or ſcrews, in order to ſtretch the cloth. Inſtead of the hair-cloth, ſome people uſe a net-work of iron-wire, by which the ſaffron is ſooner dried, and with leſs fuel; but the difficulty of preſerving it from burning makes the hair-cloth preferred by the beſt judges. The kiln is placed in a light part of the houſe; and they begin with putting five or ſix ſheets of white paper on the hair-cloth, and upon theſe they lay out the wet ſaffron two or three inches thick. It is then covered with ſome other ſheets of paper, and over theſe they lay a coarſe blanket five or ſix times doubled, or inſtead of this, a canvas pillow filled with ſtraw; and after the fire has been lighted for ſome time, the whole is covered with a board having a conſiderable weight upon it. At firſt they apply a pretty ſtrong heat, to make the chives *ſweat* as they call it; and at this time a great deal of care is neceſſary to prevent burning. When it has been thus dried about an hour, they turn the cakes of ſaffron upſide down, putting on the coverings and weight as before. If no ſinifter accident happens during theſe firſt two hours, the danger is thought to be over; and nothing more is requiſite than to keep up a very gentle fire for 24 hours, turning the cake every half hour. That fuel is beſt which yields the leaſt ſmoke; and for this reaſon charcoal is preferable to all others.

The quantity of ſaffron produced at a crop is uncertain. Sometimes five or ſix pounds of wet chives are got from one rood, ſometimes not above one or two; and ſometimes not ſo much as is ſufficient to defray the expence of gathering and drying. But it is always obſerved, that about five pounds of wet ſaffron go to make one pound of dry for the firſt three weeks of the crop, and ſix pounds during the laſt week. When the heads are planted very thick, two pounds of dry ſaffron may at a medium be allowed to an acre for the firſt crop, and 24 pounds for the two remaining ones, the third being conſiderably larger than the ſecond.

To obtain the ſecond and third crops, the labour of hoeing, gathering, picking, &c. already mentioned, muſt be repeated; and about midſummer, after the third crop is gathered, the roots muſt all be taken up and tranſplanted. For taking up the roots, ſometimes the plough is made uſe of, and ſometimes a forked hoe; and then the ground is harrowed once or twice over. During all the time of ploughing, hoeing, &c. 15 or more people will find work enough to follow and gather the roots as they are turned up. The roots are next to be carried to the houſe in ſacks, where they are cleaned and dreſſed. This labour conſiſts in cleaning the roots thoroughly from earth, decayed old pieces, involucra, or excreſcences; after which they become fit to be planted in new ground immediately, or they may be kept for ſome time, without danger of ſpoiling. The quantity of roots taken up in proportion to thoſe planted is uncertain; but, at a medium, 24 quarters of clean roots, fit to be planted, may be had from each acre.—There ſometimes happens a remarkable change in the roots of ſaffron and ſome other plants. As ſoon as they begin to ſhoot upwards, there are commonly two or three large tap-roots ſent forth from the ſide of the old one, which will run two or three inches deep into the ground. At the place where theſe bulbs firſt come out from, the old one will be formed ſometimes, though not always, and the tap-root then decays. The bulb increaſes in bigneſs, and at laſt falls quite off; which commonly happens in April. But many times theſe tap-roots never produce any bulbs, and remain barren for ever after. All ſuch roots therefore ſhould be thrown away in the making a new plantation. This degeneracy of the roots is a diſeaſe for which no cure is as yet known.

Saffron ‖ Sagapenum.

When ſaffron is offered to ſale, that kind ought to be choſen which has the broadeſt blades; this being the mark by which Engliſh ſaffron is diſtinguiſhed from the foreign. It ought to be of an orange or fiery-red colour, and to yield a dark yellow tincture. It ſhould be choſen freſh, not above a year old, in cloſe cakes, neither dry nor yet very moiſt, tough and firm in tearing, of the ſame colour within as without, and of a ſtrong, acrid, diffuſive ſmell

This drug has been reckoned a very elegant and uſeful aromatic. Beſides the virtues it has in common with other ſubſtances of that claſs, it has been accounted one of the higheſt cordials, and is ſaid to exhilarate the ſpirits to ſuch a degree as, when taken in large doſes, to occaſion immoderate mirth, involuntary laughter, and the ill effects which follow from the abuſe of ſpirituous liquors. This medicine is particularly ſerviceable in hyſteric depreſſions proceeding from a cold cauſe or obſtruction of the uterine ſecretions, where other aromatics, even thoſe of the more generous kind, have little effect. Saffron imparts the whole of its virtue and colour to rectified ſpirit, proof-ſpirit, wine, vinegar and water. A tincture drawn with vinegar loſes greatly of its colour in keeping; the watery and vinous tinctures are apt to grow ſour, and then loſe their colour alſo: that made in pure ſpirit keeps in perfection for many years.

Meadow-Saffron. See COLCHICUM.

SAGAN, in ſcripture-hiſtory, the ſuffragan or deputy of the Jewiſh high prieſt. According to ſome writers, he was only to officiate for him when he was rendered incapable of attending the ſervice through ſickneſs or legal uncleanneſs on the day of expiation; or, according to others, he was to aſſiſt the high-prieſt in the care of the affairs of the temple and the ſervice of the prieſts.

SAGAPENUM, in pharmacy, &c. a gum-reſin brought to us in two forms; the finer and purer is in looſe granules or ſingle drops; the coarſer kind is in maſſes compoſed of theſe drops of various ſizes, cemented together by a matter of the ſame kind. In either caſe, it is of a firm compact ſubſtance, conſiderably heavy, and of a reddiſh colour on the outſide, browniſh within,

Sage. within, and ſpotted in many places with ſmall yelloviſh or whitiſh ſpecks. Its ſmell is ſtrong and diſagreeable; its taſte acrid and unpleaſant. Sage.

It is brought to us from Perſia and the Eaſt Indies. The plant which produces it has never been deſcribed; but is ſuppoſed to be, as Dioſcorides ſays, of the ferula kind, from the ſeeds and fragments of the ſtalks ſometimes met with in the body of it.

Sagapenum is a very great attenuant, aperient, and diſcutient. It is good in all diſorders of the breaſt that owe their origin to a tough phlegm. It has alſo been found to diſcuſs tumors in the nervous parts in a remarkable manner; and to give relief in habitual headachs, where almoſt all things elſe have failed. Its doſe is from ten grains to two ſcruples; but it is now ſeldom given alone. It has been found, however, to do great things in aſthmas; in obſtructions of the viſcera, particularly the ſpleen; in nervous complaints; and even in epilepſies. It alſo promotes the menſes, and expels the ſecundines; and is an ingredient in the theriaca, mithridate, and other of the ſhop compoſitions.

SAGE, in botany. See SALVIA.

SAGE (Alain Rene), an ingenious French romance-writer, was born at Ruys in Brittany in the year 1667. He had a fine flow of imagination, was a complete maſter of the French and Spaniſh languages, and wrote ſeveral admired romances in imitation of the Spaniſh authors. Theſe were, The Bachelor of Salamanca, 2 vols 12mo; New Adventures of Don Quixote, 2 vols 12mo; The Devil on Two Sticks, 2 vols 12mo; and Gil Blas, 4 vols 12mo. He produced alſo ſome comedies, and other pieces of pleaſantry; and died in 1747, in a little houſe near Paris, where he ſupported himſelf by writing.

SAGE (the reverend John), ſo juſtly admired by all who knew him for his claſſical learning and reaſoning powers, was born, in 1652, in the pariſh of Creich and county of Fife, North Britain, where his anceſtors had lived for ſeven generations with great reſpect though with little property. His father was a captain in Lord Duffus's regiment, and fought for his king and country when Monk ſtormed Dundee on the 30th of Auguſt 1651.

The iſſue of the civil wars, and the loyalty of captain Sage, left him nothing to beſtow upon his ſon but a liberal education and his own principles of piety and virtue. In thoſe days the Latin language was taught in the parochial ſchools of Scotland with great ability and at a trifling expence; and after young Sage had acquired a competent knowledge of that language at one of thoſe uſeful ſeminaries, his father, without receiving from an ungrateful court any recompence for what he had loſt in the cauſe of royalty, was ſtill able to ſend him to the univerſity of St Andrew's, where having remained in college the uſual number of terms or ſeſſions, and performed the exerciſes required by the ſtatutes, he was admitted to the degree of maſter of arts, the higheſt honour which it appears he ever received from any univerſity.

During his reſidence in St Andrew's he ſtudied the Greek and Roman authors with great diligence, and was likewiſe inſtructed in logic, metaphyſics, and ſuch other branches of philoſophy as then obtained in the ſchools, which, though we affect to ſmile at them in this enlightened age, he always ſpoke of as highly uſeful to him who would underſtand the poets, hiſtorians, and orators of ancient Greece, and even the fathers of the Chriſtian church. In this opinion every man will agree with him who is at all acquainted with the ancient metaphyſics, and has read the writings of Clemens Alexandrinus, Origen, Tertullian, Chryſoſtome, and other fathers of great name; for each of thoſe writers adopted the principles of ſome one or other of the philoſophical ſects, reaſoned from their notions, and often made uſe of their terms and phraſes.

When Mr Sage had taken his maſter's degree, the narrowneſs of his fortune compelled him to accept of the firſt literary employment which was offered to him; and that happened to be nothing better than the office of ſchoolmaſter in the pariſh of Bingry in Fifeſhire, whence he was ſoon removed to Tippermuir in the county of Perth. In theſe humble ſtations, though he wanted many of the neceſſaries and almoſt all the comforts of life, he proſecuted his ſtudies with great ſucceſs; but in doing ſo, he unhappily imbibed the ſeeds of ſeveral diſeaſes which afflicted him through life, and notwithſtanding the native vigour of his conſtitution impaired his health and ſhortened his days. From the miſerable drudgery of a pariſh-ſchoolmaſter, he was relieved by Mr Drummond of Cultmalundie, who invited him to ſuperintend the education of his ſons, whom he accompanied firſt to the public ſchool at Perth, and afterwards to the univerſity of St Andrew's. This was ſtill an employment by no means adequate to his merit, but it was not wholly without advantages. At Perth he gained the friendſhip and eſteem of Dr Roſe, afterwards lord biſhop of Edinburgh, and at St Andrew's of every man capable of properly eſtimating genius and learning.

The education of his pupils was completed in 1684, when he was left with no determinate object of purſuit. In this moment of indeciſion, his friend Dr Roſe, who had been promoted from the parſonage of Perth to the profeſſorſhip of divinity in the univerſity which he was leaving, recommended him ſo effectually to his uncle then archbiſhop of Glaſgow, that he was by that prelate admitted into orders and preſented to one of the churches in the city. He was then about 34 years of age, had ſtudied the Scriptures with great aſſiduity, was no ſtranger to eccleſiaſtical hiſtory, or the apologies and other writings of the ancient fathers, was thorough maſter of ſchool-divinity, had examined with great accuracy the modern controverſies, eſpecially thoſe between the Romiſh and reformed churches, and between the Calviniſts and Remonſtrants; and it was perhaps to his honour that he did not fully approve of all the articles of faith ſubſcribed by any one of theſe contending ſects of Chriſtians.

A man ſo far advanced in life, and ſo thoroughly accompliſhed as a ſcholar, would naturally be looked up to by the greater part of the clergy as ſoon as he became one of their body. This was in fact the caſe: Mr Sage was, immediately on his admiſſion into orders, appointed clerk to the ſynod or preſbytery of Glaſgow; an office of great truſt and reſpectability, to which we know nothing ſimilar in the church of England.

During the eſtabliſhment of epiſcopacy in Scotland, from the reſtoration of Charles II. till the year 1690, the authority of the biſhops, though they poſſeſſed the

Sage. sole power of ordination, was very limited in the government of the church. They did every thing with the consent of the presbyters over whom they presided. Diocesan synods were held at stated times for purposes of the same kind with those which employ the meetings of presbyteries at present (see PRESBYTERIANS), and the only prerogative which the bishop seems to have enjoyed was to be permanent president, with a negative voice over the deliberations of the assembly. The acts of each synod, and sometimes the charge delivered by the bishop at the opening of it, were registered in a book kept by the clerk, who was always one of the most eminent of the diocesan clergy.

Mr Sage continued in this office, discharging in Glasgow all the duties of a clergyman, in such a manner as endeared him to his flock, and gained him the esteem even of those who were dissenters from the establishment. Many of his brethren were trimmers in ecclesiastical as well as in civil politics. They had been republicans and presbyterians in the days of the covenant; and, with that ferocious zeal which too often characterizes interested converts, had concurred in the severities which, during the reign of Charles II. were exercised against the party whom they had forsaken at his restoration. When that party again raised its head during the infatuated reign of James, and every thing indicated an approaching change of the establishment, those whose zeal for the church had so lately incited them to persecute the dissenters suddenly became all gentleness and condescension, and advanced towards the presbyterians as to their old friends.

The conduct of Mr Sage was the reverse of this. He was an episcopalian and a royalist from conviction: and in all his discourses public and private he laboured to instil into the minds of others the principles which to himself appeared to have their foundation in truth. To persecution he was at all times an enemy, whilst he never tamely betrayed through fear what he thought it his duty to maintain. The consequence was, that in the end of the year 1688 he was treated by the rabble, which in the western counties of Scotland rose against the established church, with greater lenity than his more complying brethren. Whilst they, without the smallest apprehension of their danger, were torn from their families by a lawless force, and many of them persecuted in the cruelest manner, he was privately warned to withdraw from Glasgow, and never more to return to that city. So much was consistency of conduct and a steady adherence to principle respected by those who seemed to respect nothing else.

Mr Sage retired to the metropolis, and carried with him the synodical book, which was afterwards demanded by the presbytery of Glasgow, but not recovered till about three or four years ago, that, on the death of a nephew of Dr Rose the last established bishop of Edinburgh, it was found in his possession, and restored to the presbytery to which it belonged. Mr Sage had detained it and given it to his diocesan and friend, from the fond hope that episcopacy would soon be re-established in Scotland; and it was doubtless with a view to contribute what he could to the realising of that hope, that, immediately on his being obliged to leave Glasgow, he commenced a keen polemical writer. At Edinburgh he preached a while, till refusing to take the oaths of allegiance when required by the government, he was obliged to retire. In this extremity, he Sage. found protection in the house of Sir William Bruce, the sheriff of Kinross, who approved his principles and admired his virtue. Returning to Edinburgh, in 1695, he was observed, and obliged to abscond. Yet he returned in 1696, when his friend Sir William Bruce was imprisoned as a suspected person. He was soon forced to look for refuge in the hills of Angus, under the name of Jackson.

After a while Mr Sage found a safe retreat with the countess of Callendar, who employed him to instruct her family as chaplain, and her sons as tutor. These occupations did not wholly engage his active mind: for he employed his pen in defending his order, or in exposing his oppressors. When the countess of Callendar had no longer sons to instruct, Sage accepted the invitation of Sir John Stuart of Garntully, who wanted the help of a chaplain, and the conversation of a scholar. With Sir John he continued till the decency of his manners, and the extensiveness of his learning, recommended him to a higher station. And, on the 25th of January 1705, he was consecrated a bishop by Paterson the Archbishop of Glasgow, Rose the bishop of Edinburgh, and Douglas the bishop of Dumblain. But this promotion did not prevent sickness from falling on him in November 1706. After lingering for many months in Scotland, he tried the effect of the waters of Bath in 1709, without success. At Bath and at London he remained a twelvemonth, recognised by the great and caressed by the learned. Yet though he was invited to stay, he returned in 1710 to his native country, which he desired to see, and where he wished to die. And though his body was debilitated, he engaged, with undiminished vigour of mind in the publication of the works of Drummond of Hawthornden, to which the celebrated Ruddiman lent his aid. Bishop Sage died at Edinburgh on the 7th of June 1711, lamented by his friends for his virtues, and feared by his adversaries for his talents.

His works are, 1st, Two letters concerning the Persecution of the Episcopal Clergy in Scotland, which with other two by different authors were printed in one volume at London in 1689. 2dly, An Account of the late Establishment of Presbyterian Government by the Parliament of Scotland, in 1690, London, 1693. 3dly, The Fundamental Charter of Presbyters, London, 1695. 4thly, The Principles of the Cyprianick Age with regard to Episcopal Power and Jurisdiction, London, 1695. 5thly, A Vindication of the Principles of the Cyprianick Age, London, 1701. 6thly, Some Remarks on the Letter from a Gentleman in the City, to a Minister in the Country, on Mr David Williamson's Sermon before the General Assembly, Edinburgh, 1703. 7thly, A Brief Examination of some Things in Mr Meldrum's Sermon, preached on the 16th of May 1703, against a Toleration to those of the Episcopal Persuasion, Edinburgh, 1703. 8thly, The Reasonableness of a Toleration of those of the Episcopal Persuasion inquired into purely on Church Principles, Edinburgh, 1704. 9thly, The Life of Gawin Douglas, in 1710. 10thly, An Introduction to Drummond's History of the Five Jameses, Edinburgh, 1711. Of the principles maintained in these publications, different readers will think very differently; and it is probable that the acrimony displayed in some of them will

be

Sagene || Sago.

be generally condemned in the preſent day; whilſt the learning and acuteneſs of their author will be univerſally acknowledged and admired by all who can diſtinguiſh merit in a friend or an adverſary.

SAGENE, a Ruſſian long meaſure, 500 of which make a verſt: the ſagene is equal to ſeven Engliſh feet.

SAGINA, in botany: A genus of the tetragynia order, belonging to the tetrandria claſs of plants; and in the natural method ranking under the 22d order, *Caryophyllei*. The calyx is tetraphyllous; the petals four; the capſule is unilocular, quadrivalved, and polyſpermous.

SAGITTARIA, ARROW-HEAD: A genus of the polyandria order, belonging to the monœcia claſs of plants; and in the natural method ranking under the fifth order, *Tripetaloideæ*. The male calyx is tryphillous; the corolla tripetalous; the filaments generally about 14; the female calyx is triphyllous; the corolla tripetalous; many piſtils; and many naked ſeeds. There are four ſpecies of which the moſt remarkable is the ſagittifolia, growing naturally in many parts of England. The root is compoſed of many ſtrong fibres, which ſtrike into the mud; the footſtalks of the leaves are in length proportionable to the depth of the water in which they grow; ſo they are ſometimes almoſt a yard long: they are thick and fungous; the leaves, which float upon the water, are ſhaped like the point of an arrow, the two ears at their baſe ſpreading wide aſunder, and are very ſharp-pointed. The flowers are produced upon long ſtalks which riſe above the leaves, ſtanding in whorls round them at the joints. They conſiſt of three broad white petals, with a cluſter of ſtamina in the middle, which have purple ſummits. There is always a bulb at the lower part of the root, growing in the ſolid earth beneath the mud. This bulb conſtitutes a conſiderable part of the food of the Chineſe; and upon that account they cultivate it. Horſes, goats, and ſwine eat it; cows are not fond of it.

SAGITTARIUS, in aſtronomy, the name of one, of the 12 ſigns of the zodiac.

SAGO, a ſimple brought from the Eaſt Indies, of conſiderable uſe in diet as a reſtorative. It is produced from a ſpecies of palm-tree (*Cycas circinalis*, L.) growing ſpontaneouſly in the Eaſt Indies without any culture. The progreſs of its vegetation in the early ſtages is very ſlow. At firſt it is a mere ſhrub, thick ſet with thorns, which makes it difficult to come near it; but as ſoon as its ſtem is once formed, it riſes in a ſhort time to the height of 30 feet, is about ſix feet in circumference, and imperceptibly loſes its thorns. Its ligneous bark is about an inch in thickneſs, and covers a multitude of long fibres; which, being interwoven one with another, envelope a maſs of a gummy kind of meal. As ſoon as this tree is ripe, a whitiſh duſt, which tranſpires through the pores of the leaves, and adheres to their extremities, proclaims its maturity. The Malais then cut them down near the root, divide them into ſeveral ſections, which they ſplit into quarters: they then ſcoop out the maſs of mealy ſubſtance, which is enveloped by and adheres to the fibres; they dilute it in pure water, and then paſs it through a ſtraining bag of fine cloth, in order to ſeparate it from the fibres. When this paſte has loſt part of its moiſture by evaporation, the Malais throw it into a kind of earthen veſſels, of different ſhapes, where they allow it to dry and harden. This paſte is wholeſome nouriſhing food, and preſerves for many years. The Indians eat it diluted with water, and ſometimes baked or boiled. Through a principle of humanity, they reſerve the fineſt part of this meal for the aged and infirm. A jelly is ſometimes made of it, which is white and of a delicious flavour.

Sagum. Sail.

SAGUM, in Roman antiquity, a military habit, open from top to bottom, and uſually faſtened on the right ſhoulder with a buckle or claſp. It was not different in ſhape from the *chlamys* of the Greeks and the *paludamentum* of the generals. The only difference between them was, that the paludamentum was made of a richer ſtuff, was generally of a purple colour, and both longer and fuller than the ſagum.

SAGUNTUM, an ancient town of Spain, now called *Morvedro*, where there are ſtill the ruins of a Roman amphitheatre to be ſeen. The new town is ſeated on a river called *Morvedro*, 15 miles to the north of Valencia, in E. Long. 0. 10. N. Lat. 39. 38. It was taken by Lord Peterborough in 1706.

SAICK, or SAIQUE, a Turkiſh veſſel, very common in the Levant for carrying merchandize.

SAIDE, the modern name of Sidon. See SIDON.

SAIL, in navigation, an aſſemblage of ſeveral breadths of canvas ſewed together by the liſts, and edged round with cord, faſtened to the yards of a ſhip, to make it drive before the wind. See SHIP.

The edges of the cloths, or pieces, of which a ſail is compoſed are generally ſewed together with a double ſeam; and the whole is ſkirted round at the edges with a cord, called the *bolt-rope*.

Although the form of ſails is extremely different, they are all nevertheleſs triangular or quadrilateral figures; or, in other words, their ſurfaces are contained either between three or four ſides.

The former of theſe are ſometimes ſpread by a yard, as lateen-ſails; and otherwiſe by a ſtay, as ſtay-ſails; or by a maſt, as ſhoulder-of-mutton ſails; in all which caſes the foremoſt leech or edge is attached to the ſaid yard, maſt, or ſtay, throughout its whole length. The latter, or thoſe which are four-ſided, are either extended by yards, as the principal ſails of a ſhip; or by yards and booms, as the ſtudding-ſails, drivers, ring-tails, and all thoſe ſails which are ſet occaſionally; or by gaffs and booms, as the main-ſails of ſloops and brigantines.

The principal ſails of a ſhip (Plate CCCCXLIV. fig. 2.) are the courſes or lower ſails *a*; the top-ſails *b*, which are next in order above the courſes; and the top-gallant ſails *c*, which are expanded above the top-ſails.

The courſes are the main-ſail, fore-ſail and mizen, main ſtay-ſail, fore ſtay-ſail, and mizen ſtay-ſail: but more particularly the three firſt. The main-ſtay ſail is rarely uſed except in ſmall veſſels.

In all quadrangular ſails the upper edge is called the *head*; the ſides or ſkirts are called *leeches*; and the bottom or lower edge is termed the *foot*. If the head is parallel to the foot, the two lower corners are denominated *clues*, and the upper corners *earings*.

In all triangular ſails, and in thoſe four-ſided ſails wherein the head is not parallel to the foot, the foremoſt corner at the foot is called the *tack*, and the after lower corner the *clue*; the foremoſt perpendicular or ſloping edge is called the *fore-leech*, and the hindmoſt the *after-leech*.

Sail. The leads of all four-ſided ſails, and the fore leeches of lateen-ſails, are attached to their reſpective yard or gaff by a number of ſmall cords called *ro-bands*; and the extremities are tied to the yard-arms, or to the peek of the gaff, by earings.

The ſtay-ſails are extended upon ſtays between the maſts, whereon they are drawn up or down occaſionally, as a curtain ſlides upon its rod, and the lower parts are ſtretched out by a tack and ſheet. The clues of a top-ſail are drawn out to the extremities of the lower yard, by two large ropes called the *top-ſail ſheets*; and the clues of the top-gallant ſails are in like manner extended upon the top-ſail yard-arms, as exhibited by fig. 2.

The ſtudding-ſails are ſet beyond the leeches or ſkirts of the main-ſail and fore-ſail, or of the top-ſails or top-gallant ſails of a ſhip. Their upper and lower edges are accordingly extended by poles run out beyond the extremities of the yards for this purpoſe. Thoſe ſails, however, are only ſet in favourable winds and moderate weather.

All ſails derive their name from the maſt, yard, or ſtay, upon which they are extended. Thus the principal ſail extended upon the main-maſt is called the *main-ſail*, *d*; the next above, which ſtands upon the main-top maſt, is termed the *main-top ſail*, *e*; and the higheſt, which is ſpread acroſs the main-top-gallant maſt, is named the *main top gallant ſail*, *f*.

In the ſame manner there is the fore-ſail, *g*; the fore top-ſail, *h*; and the fore-top-gallant-ſail, *i*; the mizen, *k*; the mizen top-ſail, *l*; and mizen top-gallant-ſail, *m*. Thus alſo there is the main-ſtay-ſail, *o*; main-top-maſt ſtay-ſail, *p*; and main-top-gallant ſtay-ſail, *q*; with a middle ſtay-ſail which ſtands between the two laſt.

N. B. All theſe ſtay-ſails are between the main and fore-maſts.

The ſtay-ſails between the main-maſt and mizen-maſt are the mizen ſtay-ſail, *r*; and the mizen top-maſt ſtay-ſail, *s*; and ſometimes a mizen top-gallant ſtay-ſail above the latter.

The ſtay-ſails between the foremaſt and the bow-ſprit are the fore ſtay-ſail, *t*; the fore top-maſt ſtay-ſail *u*; and the jib, *x*. There is beſides two ſquare ſails extended by yards under the bow-ſprit, one of which is called the *ſprit-ſail*, *y*; and the other the *ſprit-ſail top-ſail*, *z*.

The ſtudding-ſails being extended upon the different yards of the main-maſt and fore-maſt, are likewiſe named according to their ſtations, the *lower*, *top-maſt*, or *top-gallant ſtudding ſails*.

The ropes by which the lower yards of a ſhip are hoiſted up to their proper height on the maſts, are called the *jears*. In all other ſails the ropes employed for this purpoſe are called *haliards*.

The principal ſails are then expanded by haliards, ſheets, and bowlines; except the courſes, which are always ſtretched out below by a tack and ſheet. They are drawn up together, or truſſed up, by bunt-lines, clue lines, *dd*; leech-lines, *ee*; reef-tackles, *ff*; ſlab-line, *g*; and ſpiling lines. As the bunt-lines and leech-lines pass on the other ſide of the ſail, they are expreſſed by the dotted lines in the figure.

The courſes, top-ſails, and top-gallant ſails, are wheeled about the maſt, ſo as to ſuit the various directions of the wind by braces. The higher ſtudding ſails, and in general all the ſtay-ſails, are drawn down, ſo as to be furled, or taken in, by down-hauls. Sail.

Some experienced ſail-makers contend, that it would be of much advantage if many of the ſails of ſhips were made of equal magnitude; in which caſe, when neceſſity required it, they could be interchangeably uſed. For example, as the mizen top-ſail is now made nearly as large as the main top-gallant ſail, it would be eaſy to make the yards, maſts, and ſails, ſo as mutually to ſuit each other. The main and fore-top ſails differ about two feet at head and foot, and from one to three feet in depth. Theſe likewiſe could be eaſily made alike, and in ſome caſes they are ſo. The ſame may be ſaid of the main and fore top-gallant ſails, and of the mizen top-gallant ſail, and main fore-royal. The main-ſail and fore-ſail might alſo, with reſpect to their head, be made alike; but as the former has a gore at the leech, and a larger gore at the foot for clearing it of the gallows, boats, &c. which the latter has not, there might be more difficulty in arranging them. The difficulty, however, appears not to be inſurmountable. Theſe alterations, it is thought, would be extremely uſeful in the event of loſing ſails by ſtreſs of weather. Fewer ſails would be thus neceſſary, leſs room would be required to ſtow them, and there would be leſs danger of confuſion in taking them out. But perhaps the utility of theſe alterations will be more felt in the merchant-ſervice than in the navy, which latter has always a large ſtore of ſpare ſails, and ſufficient room to ſtow them in order. Thus, too, ſpare yards and maſts might be conſiderably reduced in number, and yet any caſual damages more eaſily repaired at ſea. Top-maſt ſtudding ſails are occaſionally ſubſtituted for awnings, and might, by a very little attention in planning the rigging of a ſhip, be ſo contrived as to anſwer both purpoſes. See SHIP-BUILDING.

SAIL is alſo a name applied to any veſſel beheld at a diſtance under ſail.

To ſet SAIL, is to unfurl and expand the ſails upon their reſpective yards and ſtays, in order to begin the action of ſailing.

To Make SAIL, is to ſpread an additional quantity of ſail, ſo as to increaſe the ſhip's velocity.

To ſhorten SAIL, is to reduce or take in part of the ſails, with an intention to diminiſh the ſhip's velocity.

To Strike SAIL, is to lower ſuddenly. This is particularly uſed in ſaluting or doing homage to a ſuperior force, or to one whom the law of nations acknowledges as ſuperior in certain regions. Thus all foreign veſſels ſtrike to a Britiſh man of war in the Britiſh ſeas.

SAILING, the movement by which a veſſel is wafted along the ſurface of the water, by the action of the wind upon her ſails.

When a ſhip changes her ſtate of reſt into that of motion, as in advancing out a harbour, or from her ſtation at anchor, ſhe acquires her motion very gradually, as a body which arrives not at a certain velocity till after an infinite repetition of the action of its weight.

The firſt impreſſion of the wind greatly affects the velocity, becauſe the reſiſtance of the water might deſtroy it; ſince the velocity being but ſmall at firſt, the re

Sail. reſiſtance of the water which depends on it will be very feeble: but as the ſhip increaſes her motion, the force of the wind on the ſails will be diminiſhed; whereas, on the contrary, the reſiſtance of the water on the bow will accumulate in proportion to the velocity with which the veſſel advances. Thus the repetition of the degrees of force, which the action of the ſails adds to the motion of the ſhip, is perpetually decreaſing; whilſt, on the contrary, the new degrees added to the effort of reſiſtance on the bow are always augmenting. The velocity is then accelerated in proportion as the quantity added is greater than that which is ſubtracted; but when the two powers become equal; when the impreſſion of the wind on the ſails has loſt ſo much of its force, as only to act in proportion to the oppoſite impulſe of reſiſtance on the bow, the ſhip will then acquire no additional velocity, but continue to ſail with a conſtant uniform motion. The great weight of the ſhip may indeed prevent her from acquiring her greateſt velocity; but when ſhe has attained it, ſhe will advance by her own intrinſic motion, without gaining any new degree of velocity, or leſſening what ſhe has acquired. She moves then by her own proper force *in vacuo*, without being afterwards ſubject either to the effort of the wind on the ſails, or to the reſiſtance of the water on the bow. If at any time the impulſion of the water on the bow ſhould deſtroy any part of the velocity, the effort of the wind on the ſails will revive it, ſo that the motion will continue the ſame. It muſt, however, be obſerved, that this ſtate will only ſubſiſt when theſe two powers act upon each other in direct oppoſition; otherwiſe they will mutually deſtroy one another. The whole theory of working ſhips depends on this counter-action, and the perfect equality which ſhould ſubſiſt between the effort of the wind and the impulſion of the water.

The effect of ſailing is produced by a judicious arrangement of the ſails to the direction of the wind. Accordingly the various modes of ſailing are derived from the different degrees and ſituations of the wind with regard to the courſe of the veſſel. See Seamanſhip.

To illuſtrate this obſervation by examples, the plan of a number of ſhips proceeding on various courſes are repreſented by fig. 3. which exhibits the 32 points of the compaſs, of which C is the centre; the direction of the wind, which is northerly, being expreſſed by the arrow.

It has been obſerved in the article *Close-Hauled*, that a ſhip in that ſituation will ſail nearly within ſix points of the wind. Thus the ſhips B and *y* are cloſe-hauled; the former being on the larboard tack, ſteering E. N. E. and the latter on the ſtarboard tack, ſailing W. N. W. with their yards *a b* braced obliquely, as ſuitable to that manner of ſailing. The line of battle on the larboard tack would accordingly be expreſſed by CB, and on the ſtarboard by C*y*.

When a ſhip is neither cloſe-hauled, nor ſteering afore the wind, ſhe is in general ſaid to be ſailing large. The relation of the wind to her courſe is preciſely determined by the number of points between the latter and the courſe cloſe-hauled. Thus the ſhips *c* and *x* have the wind one point large, the former ſteering E. *b* N. and the latter W. *b* N. The yards remain almoſt in the ſame poſition as in B and *y*; the bowlines and ſheets of the ſails being only a little ſlackened. Sail.

The ſhips *d* and *u* have the wind two points large, the one ſteering eaſt and the other weſt. In this manner of ſailing, however, the wind is more particularly ſaid to be upon the beam, as being at right angles with the keel, and coinciding with the poſition of the ſhip's beams. The yards are now more acroſs the ſhip, the bowlines are caſt off, and the ſheets more relaxed; ſo that the effort of the wind being applied nearer to the line of the ſhip's courſe, her velocity is greatly augmented.

In *e* and *t* the ſhips have the wind three points large, or one point abaft the beam, the courſe of the former being E. *b* S. and that of the latter W. *b* S. The ſheets are ſtill more flowing, the angle which the yards make with the keel further diminiſhed, and the courſe accelerated in proportion.

The ſhips *f* and *f*, the firſt of which ſteers E. S. E. and the ſecond W. S. W. have the wind four points large, or two points abaft the beam. In *g* and *r* the wind is five points large, or three points abaft the beam, the former ſailing S. E. *b* E. and the latter S. W. *b* W. In both theſe ſituations the ſheets are ſtill farther ſlackened, and the yards laid yet more athwart the ſhip's length, in proportion as the wind approaches the quarter.

The ſhips *h* and *q*, ſteering S. E. and S. W. have the wind ſix points large, or more properly on the quarter; which is conſidered as the moſt favourable manner of ſailing, becauſe all the ſails co-operate to increaſe the ſhip's velocity: whereas, when the wind is right aft, as in the ſhip *m*, it is evident that the wind in its paſſage to the foremoſt ſails will be intercepted by thoſe which are farther aft. When the wind is on the quarter, the fore-tack is brought to the cat-head; and the main-tack being caſt off, the weather-clue of the main-ſail is hoiſted up to the yard, in order to let the wind paſs freely to the fore-ſail; and the yards are diſpoſed ſo as to make an angle of about two points, or nearly 22°, with the keel.

The ſhips *i* and *p*, of which the former ſails S. E. *b* S. and the latter S. W. *b* S are ſaid to have the wind three points on the larboard or ſtarboard quarter: and thoſe expreſſed by *k* and *o*, two points; as ſteering S. S. E. and S. S. W. in both which poſitions the yards make nearly an angle of 16°, or about a point and an half, with the ſhip's length.

When the wind is one point on the quarter, as in the ſhips *l* and *z*, whoſe courſes are S. *b* E. and S. *b* W. the ſituation of the yards and ſails is very little different from the laſt mentioned; the angle which they make with the keel being ſomewhat leſs than a point, and the ſtay-ſails being rendered of very little ſervice. The ſhip *m* ſails right afore the wind, or with the wind right aft. In this poſition the yards are laid at right angles with the ſhip's length: the ſtay-ſails being entirely uſeleſs, are hauled down; and the main-ſail is drawn up in the brails, that the fore-ſail may operate; a meaſure which conſiderably facilitates the ſteerage, or effort of the helm. As the wind is then intercepted by the main-top-ſail and main-top-gallant-ſail, in its paſſage to the fore-top-ſail and fore-top-gallant-ſail, theſe latter are by conſequence entirely becalmed; and

might

Sailing || Saint.

might therefore be furled, to prevent their being fretted by flapping againſt the maſt, but that their effort contributes greatly to prevent the ſhip from broaching-to, when ſhe deviates from her courſe to the right or left thereof.

Thus all the different methods of ſailing may be divided into four, viz. cloſe-hauled, large, quartering, and afore the wind; all which relate to the direction of the wind with regard to the ſhip's courſe, and the arrangement of the ſails.

SAILING alſo implies a particular mode of navigation, formed on the principles, and regulated by the laws, of trigonometry. Hence we ſay, Plain Sailing, Mercator's, Middle-latitude, Parallel, and Great-circle Sailing. See the article NAVIGATION.

SAIL-MAKING, the art of making ſails. See SAIL and SHIP-BUILDING.

SAILOR, the ſame with MARINER and SEAMAN.

SAINT, means a perſon eminent for piety and virtue, and is generally applied by us to the apoſtles and other holy perſons mentioned in Scripture. But the Romaniſts make its application much more extenſive. Under the word CANONIZATION we have already ſaid ſomething on their practice of creating ſaints. Our readers, however, will not, we truſt, be diſpleaſed with the following more enlarged account, which they themſelves give of the matter. The canonization of ſaints, then, they tell us, is the enrolment of any perſon in the *canon* or catalogue of thoſe who are called *ſaints*; or, it is a judgment and ſentence of the church, by which it is declared, that a deceaſed perſon was eminent for ſanctity during his lifetime, and eſpecially towards the end of it; and that conſequently he muſt now be in glory with God, and deſerves to be honoured by the church on earth with that veneration which ſhe is wont to pay to the bleſſed in heaven.

The diſcipline with regard to this matter has varied. It would ſeem that in the firſt ages every biſhop in his own dioceſe was wont to declare what perſons were to be honoured as ſaints by his people. Hence St Cyprian, about the middle of the third century, B. 3. *ep.* 6. requires that he be informed of thoſe who ſhould die in priſon for the faith, that ſo he might make mention of them in the holy ſacrifice with the martyrs, and might honour them afterwards on the anniverſary day of their happy death. This veneration continued ſometimes to be confined to one country; but ſometimes it extended to diſtant provinces, and even became univerſal all over the church. It was thus that St Laurence, St Ambroſe, St Auguſtine, St Baſil, and many others, appear to have been canonized by cuſtom and univerſal perſuaſion. In thoſe ages none were reckoned ſaints but the apoſtles, the martyrs, and very eminent confeſſors, whoſe ſanctity was notorious everywhere.

Afterwards it appears that canonizations were wont to be performed in provincial ſynods under the direction of the metropolitan. It was thus that St Iſidore of Seville was canonized in the 7th century, by the 8th council of Toledo, 14 years after his death. This manner of canonization continued occaſionally down to the 12th century. The laſt inſtance of a ſaint canonized in that way, is that of St Walter abbot of Pontoiſe, who was declared a ſaint by the archbiſhop of Rheims in the year 1153.

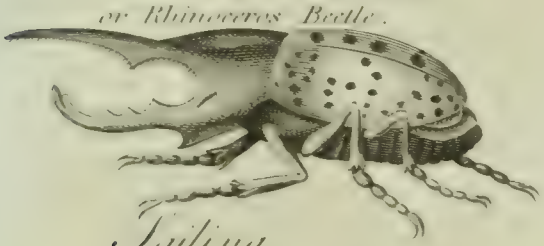
In the 12th century, in order to prevent miſtakes in ſo delicate a matter, Pope Alexander III. judged it proper to reſerve this declaration to the holy ſee of Rome excluſively; and decreed that no one ſhould for the future be honoured by the church as a ſaint without the expreſs approbation of the pope. Saint.

Since that time, the canonization of ſaints has been carried on in the form of a proceſs; and there is at Rome a congregation of cardinals, called the *congregation of holy rites*, who are aſſiſted by ſeveral divines under the name of *conſultors*, who examine ſuch matters, and prepare them for the deciſion of his holineſs. When therefore any potentate, province, city, or religious body, think fit, they apply to the pope for the canonization of any perſon.

The firſt juridical ſtep in this buſineſs muſt be taken by the biſhop in whoſe dioceſe the perſon for whom the application is made had lived and died, who by his own authority calls witneſſes to atteſt the opinion of the holineſs, the virtues, and miracles, of the perſon in queſtion. When the deceaſed has reſided in different dioceſes, it may be neceſſary that different biſhops take ſuch depoſitions; the originals of which are preſerved in the archives of their reſpective churches, and authentic copies ſealed up are ſent to Rome by a ſpecial meſſenger, where they are depoſited with the congregation of rites, and where they muſt remain for the ſpace of ten years without being opened. They are then opened, and maturely examined by the congregation, and with their advice the pope allows the cauſe to go on or not as he thinks proper. The ſolicitors for the canonization are then referred by his holineſs to the ſaid congregation, which, with his authority, gives a commiſſion to one or more biſhops, or other reſpectable perſons, to examine, on the ſpot and in the places where the perſon in queſtion has lived and died, into his character and whole behaviour. Theſe commiſſioners ſummon witneſſes, take depoſitions, and collect letters and other writings of the venerable man, and get all the intelligence they can concerning him, and the opinion generally entertained of him. The report of theſe commiſſioners is conſidered attentively and at length by the congregation, and every part of it diſcuſſed by the conſultors, when the congregation determines whether or not they can permit the proceſs to go on. If it be allowed to proceed, a cardinal, who is called *ponent*, undertakes to be the principal agent in that affair. The firſt queſtion then that comes to be examined is, whether or not the perſon propoſed for canonization can be proved to have been in an eminent degree endued with the moral virtues of prudence, juſtice, fortitude, and temperance; and with the theological virtues of faith, hope, and charity? All this is canvaſſed with great deliberation; and there is a diſtinguiſhed eccleſiaſtic called the *promoter of the holy faith*, who is ſworn to make all reaſonable objections to the proofs that are adduced in favour of the canonization. If the deciſion be favourable, then the proofs of miracles done to ſhow the ſanctity of the perſon in queſtion are permitted to be brought forward; when two miracles muſt be verified to the ſatisfaction of the congregation, both as to the reality of the facts, and as their having been truly above the power of nature. If the deciſion on this comes out likewiſe favourable, then the whole is laid

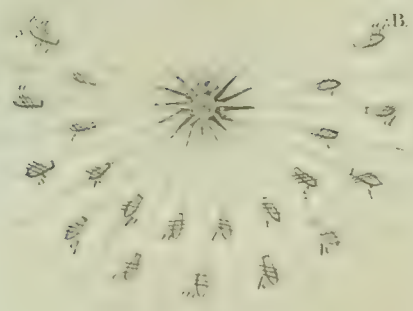
Scarabæus Carnifex.

Sapindus Saponaria.



Scarabæus Hercules.
or Rhinoceros Beetle.

Sailing.



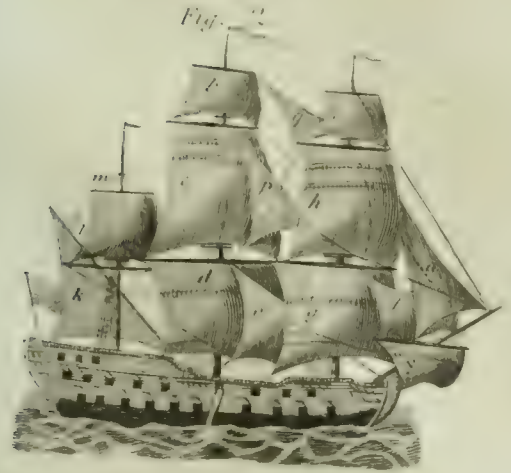
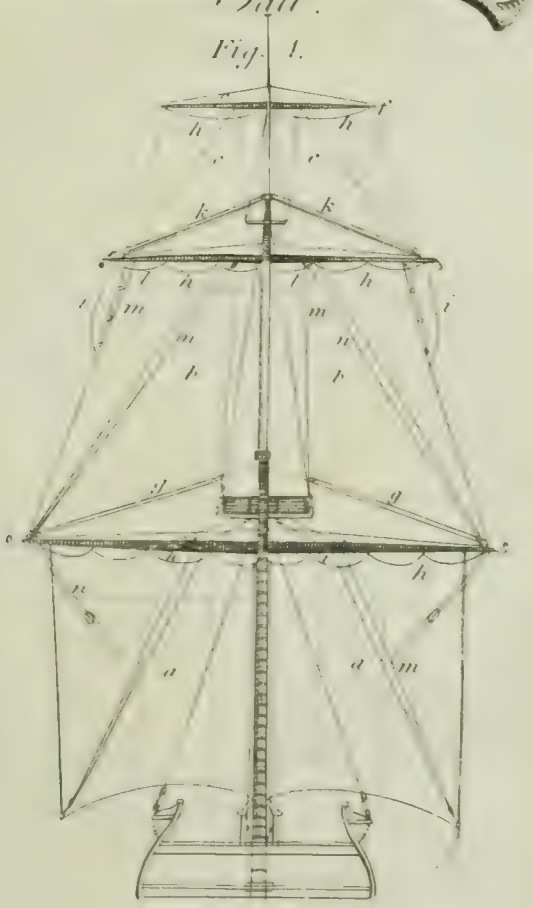


Fig. 2.

Sail.

Fig. 1.



Saint. before the pope and what divines he chooſes (A). Public prayer and faſting are likewiſe preſcribed, in order to obtain light and direction from heaven. After all this long procedure, when the pope is reſolved to give his approbation, he iſſues a bull, firſt of *beatification*, by which the perſon is declared *bleſſed*, and afterwards another of *ſanctification*, by which the name of *ſaint* is given him. Theſe bulls are publiſhed in St Peter's church with very great ſolemnity.

A perſon remarkable for holineſs of life, even before he is canonized, may be venerated as ſuch by thoſe who are perſuaded of his eminent virtue, and his prayers may be implored: but all this muſt reſt on private opinion. After his canonization, his name is inſerted in the Martyrology, or catalogue of ſaints, of which the reſpective portion is read every day in the choir at the divine office. A day is alſo appointed for a yearly commemoration of him. His name may be mentioned in the public church ſervice, and his interceſſion with God beſought. His relics may be enſhrined: he may be painted with rays of glory, and altars and churches may be dedicated to God in honour of him, and in thankſgiving to the divine goodneſs for the bleſſings beſtowed on him in life, and for the glory to which he is raiſed in heaven.

The affair of a canonization is neceſſarily very expenſive, becauſe ſo many perſons muſt be employed about it; ſo many journeys muſt be made; ſo many writings for and againſt it muſt be drawn out. The expence altogether amounts to about 25,000 Roman crowns, or L. 6000 Sterling. But it is generally contrived to canonize two or three at a time, by which means the particular expence of each is very much leſſened, the ſolemnity being common.

It often happens that the ſolicitors for a canonization are unſucceſsful. Thus the Jeſuits, even when their intereſt at Rome was greateſt, could not obtain the canonization of Bellarmine; and it is remarkable, that the objection is ſaid to have been, his having defended the indirect power of the pope over Chriſtian princes even in temporals.

Several authors have written on canonization, and particularly Proſper Lambertini, afterwards pope under the name of Benedict XIV. who had held the office of *promoter of the faith* for many years. He publiſhed on it a large work in ſeveral volumes, in folio, of which there is an abridgment in French. In this learned performance there is a full hiſtory of the canonization of ſaints in general, and of all the particular proceſſes of that kind that are on record: an account is given of the manner of proceeding in theſe extraordinary trials; and it is ſhown, that, beſides the aſſiſtance of Providence, which is implored and expected in what is ſo much connected with religion, all prudent human means are made uſe of, in order to avoid miſtakes, and to obtain all the evidence of which the matter is ſuſceptible, and which muſt appear more than ſufficient to every impartial judge. See Pope, Popery, &c.

Saint-Foin, in botany, a ſpecies of the hedyſarum. See Hedysarum; and Agriculture, n° 180.

Saint Januarius's Blood. See Chemistry, n° 800.

Saint ‖ Saintes.

SAINTES, an ancient and conſiderable town of France. It is the capital of Saintonge, and before the revolution was a biſhop's ſee. It contained likewiſe ſeveral convents, a Jeſuits college, and an abbey remarkable for its ſteeple, built with ſmall ſtones, which admits the light. It is ſeated on an eminence, 37 miles ſouth-eaſt of Rochelle, and 262 ſouth ſouth-weſt of Paris. W. Long. 0. 34. N. Lat. 45. 45. The caſtle is ſeated on a rock, and is reckoned impregnable.

This city was a Roman colony; and thoſe conquerors of the earth, who poliſhed the nations they ſubdued, have left behind them the traces of their magnificence. In a hollow valley between two mountains, and almoſt adjoining to one of the ſuburbs, are the ruins of the amphitheatre. Though now in the laſt ſtage of decay, its appearance is auguſt and venerable. In ſome parts, ſcarce any of the arches are to be ſeen; but the eaſt end is ſtill in a great degree of preſervation. From its ſituation in a valley, and from the ruins of an aqueduct which conveyed water to the town from near three leagues diſtance, it has been ſuppoſed that Naumachiæ were repreſented in it; but this amounts only to conjecture. A triumphal arch, on which is an inſcription in Roman letters, merits likewiſe attention. It was erected to Germanicus, on the news of his death, ſo univerſally lamented throughout the empire. The river Charente ſurrounds this city, as the Severne does that of Shrewſbury, deſcribing the form of a horſe-ſhoe.

Except the remains of Roman grandeur yet viſible at Saintes, the place contains very little to detain or amuſe a traveller. It is built with great irregularity; the ſtreets are narrow and winding, the houſes mean, and almoſt all of them are ſome centuries old. The cathedral has been repeatedly defaced and deſtroyed by Normans and Huguenots, who made war alike on every monument of art or piety. One tower only eſcaped their rage, which is ſaid to have been built as early as the year 800 by Charlemagne. It is of an enormous magnitude, both as to height and circumference. Theſe circumſtances have probably conduced more to its preſervation during the fury of war, than any veneration for the memory of its founder, or for the ſanctity of its inſtitution.

SAINTONGE, a province of France, bounded on the eaſt by Angoumois and Perigord, on the north by Poitou and the territory of Aunis, on the weſt by the ocean, and on the ſouth by Bourdelois, and Giron, about 62 miles in length and 30 in breadth. The river Charente runs through the middle of it, and renders it one of the fineſt and moſt fertile provinces in France, abounding in all ſorts of corn and fruits; and they make the beſt ſalt here in Europe.

The SAINTS, three leagues diſtant from Guadaloupe, are two very ſmall iſlands, which, with another yet ſmaller, form a triangle, and have a tolerable harbour. Thirty Frenchmen were ſent thither in 1648, but were ſoon driven away by an exceſſive drought, which dried up their only ſpring before they had time to make any reſervoirs. A ſecond attempt was made in 1652, and

(A) His holineſs generally appoints three conſiſtories; in the firſt of which the cardinals only aſſiſt, and give their opinion; in the ſecond, a preacher pronounces a ſpeech in praiſe of the candidate before a numerous audience; to the third, not only the cardinals, but all the biſhops who are at Rome, are invited, and all of them give their vote by word of mouth.

Sakradawendra || Salamanca.

and lafting plantations were eſtabliſhed, which now yield 50,000 weight of coffee, and 100,000 of cotton.

SAKRADAWENDRA is the name of one of the Ceylonefe deities, who commands and governs all the reſt, and formerly anſwered the prayers of his worſhippers; but according to the fabulous account which is given of him, the golden chair, on which he ſat, and the foot of which was made of wax, that was ſoftened by their prayers and tears, and ſunk downward, ſo that he could take notice of their requeſts and relieve them, being diſpoſed of among the poor, they no longer derive any benefit from him, or pay him any reverence. See BUDUN.

SAL. See SALT.

SAL Alembroth. See CHEMISTRY, n° 1047.

Native SAL *Ammoniac.* This ſalt, according to Mongou, is met with in the form of an efflorefcence on the ſurface of the earth, or adhering in powder to rocks. Sometimes, as in Perſia and the country of the Kalmucks, it is found as hard as ſtone. It is met with of different colours, as grey, black, green, and red, in the neighbourhood of volcanoes, in the caverns or grottoes of Puzzuoli, and in the mineral lakes of Tuſcany, as well as in ſome mountains of Tartary and Thibet. At Solfaterra, near Naples, it is found in the crevices, of a yelloviſh colour, like common ſal-ammoniac more than once ſublimed. For common ſal-ammoniac, ſee CHEMISTRY-*Index* at *Ammoniac* and *Ammoniacal Salt*.

SAL, Fixed. See CHEMISTRY n° 1016.

SAL, Glauber's ſecret. See CHEMISTRY-*Index* at *Glauber*.

SAL Nitrous. See CHEMISTRY, n° 292, &c.

SAL Vegetable. See CHEMISTRY-*Index* at *Salts*, &c.

SAL Volatile. See CHEMISTRY-*Index* at *Volatile*.

SAL Digeſtivus, Sylvii. See CHEMISTRY, n° 379, 421, 794.

SAL Diureticus. See CHEMISTRY, n° 868.

SAL Microcoſmicus. See CHEMISTRY, n° 606. and 905.

SAL Prunellæ. See CHEMISTRY, n° 744.

SAL Sedativus. See CHEMISTRY-*Index* at *Borax*.

SAL Volatile Oleoſum. See CHEMISTRY, n° 1036.

SALADIN, a famous ſultan of Egypt, equally renowned as a warrior and legiſlator. He ſupported himſelf by his valour, and the influence of his amiable character, againſt the united efforts of the chief Chriſtian potentates of Europe, who carried on the moſt unjuſt wars againſt him, under the falſe appellation of *Holy Wars*. See under the articles EGYPT and CROISADE.

SALAMANCA, an ancient, large, rich, and populous city of Spain, in the kingdom of Leon, ſituated on the river Tormes, about 75 miles weſt from Madrid. It is ſaid to have been founded by Teucer the ſon of Telamon, who called it *Salamis* or *Salmantica*, in memory of the ancient Salamis. Here is an univerſity, the greateſt in Spain, and perhaps inferior to none in the whole world, in reſpect at leaſt to its revenues, buildings, number of ſcholars, and maſters. Here are alſo many grand and magnificent palaces, ſquares, convents, churches, colleges, chapels, and hoſpitals. The biſhop of this country is ſuffragan to the archbiſhop of Compoſtella, and has a yearly revenue of 1000 ducats. A Roman way leads from hence to Merida and Seville, and there is an old Roman bridge over the river. Of the colleges in the univerſity, four are appropriated to young men of quality; and near it is an infirmary for poor ſick ſcholars. W. Long. 6. 10. N. Lat. 41. 0.

Salamander, Salamis.

SALAMANDER, in zoology. See LACERTA.

SALAMIS, an iſland of the Archipelago, ſituated in E. Long. 34. 0. N. Lat. 37. 32.—It was famous in antiquity for a battle between the Greek and Perſian fleets. In the council of war held among the Perſians on this occaſion, all the commanders were for engaging, becauſe they knew this advice to be moſt agreeable to the king's inclinations. Queen Artemiſia was the only perſon who oppoſed this reſolution. She was queen of Halicarnaſſus; and followed Xerxes in this war with five ſhips, the beſt equipped of any in the fleet, except thoſe of the Sidonians. This princeſs diſtinguiſhed herſelf on all occaſions by her ſingular courage, and ſtill more by her prudence and conduct. She repreſented, in the council of war we are ſpeaking of, the dangerous conſequences of engaging a people that were far more expert in maritime affairs than the Perſians; alleging, that the loſs of a battle at ſea would be attended with the ruin of their army; whereas, by ſpinning out the war, and advancing into the heart of Greece, they would create jealouſies and diviſions among their enemies, who would ſeparate from one another, in order to defend each of them their own country; and that the king, might, almoſt without ſtriking a blow, make himſelf maſter of Greece. This advice, though very prudent, was not followed, but an engagement unanimouſly reſolved upon. Xerxes, in order to encourage his men by his preſence, cauſed a throne to be erected on the top of an eminence, whence he might ſafely behold what ever happened; having ſeveral ſcribes about him, to write down the names of ſuch as ſhould ſignalize themſelves againſt the enemy. The approach of the Perſian fleet, with the news that a ſtrong detachment from the army was marching againſt Cleombrotus, who defended the iſthmus, ſtruck ſuch a terror into the Peloponneſians, that they could not by any intreaties be prevailed upon to ſtay any longer at Salamis. Being therefore determined to put to ſea, and fail to the iſthmus, Themiſtocles privately diſpatched a truſty friend to the Perſian commanders, informing them of the intended flight; and exhorting them to ſend part of their fleet round the iſland, in order to prevent their eſcape. The ſame meſſenger aſſured Xerxes, that Themiſtocles, who had ſent him that advice, deſigned to join the Perſians, as ſoon as the battle began, with all the Athenian ſhips. The king giving credit to all he ſaid, immediately cauſed a ſtrong ſquadron to ſail round the iſland in the night in order to cut off the enemy's flight. Early next morning, as the Peloponneſians were preparing to ſet ſail, they found themſelves encompaſſed on all ſides by the Perſian fleet; and were againſt their will obliged to remain in the ſtraits of Salamis and expoſe themſelves to the ſame dangers with their allies. The Grecian fleet conſiſted of 380 ſail, that of the Perſians of 2000 and upwards. Themiſtocles avoided the engagement till a certain wind, which roſe regularly every day at the ſame time, and which was entirely contrary to the enemy, began to blow. As ſoon as he found himſelf favoured by this wind, he gave the ſignal for battle. The Perſians, knowing that they fought under their king's eye, advanced with great reſolution; but the wind blowing directly in their faces, and the largeneſs and

Salamis, Salary.

number of their ships embarrassing them in a place so strait and narrow, their courage soon abated; which the Greeks observing, used such efforts, that in a short time breaking into the Persian fleet, they entirely disordered them; some flying towards Phalarus, where their army lay encamped; others saving themselves in the harbours of the neighbouring islands. The Ionians were the first that betook themselves to flight But queen Artemisia distinguished herself above all the rest, her ships being the last that fled: which Xerxes observing, cried out that the men behaved like women, and the women with the courage and intrepidity of men. The Athenians were so incensed against her, that they offered a reward of 10,000 drachmas to any one that should take her alive: but she, in spite of all their effors, got clear of the ships that pursued her, and arrived safe on the coast of Asia. In this engagement, which was one of the most memorable actions we find recorded in history, the Grecians lost 40 ships; and the Persians 200, besides a great many more that were taken, with all the men and ammunition they carried.

The island of Salamis is of a very irregular shape; it was reckoned 70 or 80 stadia, *i. e.* 8 or 10 miles long, reaching westward as far as the mountains called *Kerata* or *The Horns*. Pausanias informs us, that on one side of this island stood in his time a temple of Diana, and on the other a trophy for a victory obtained by Themistocles, together with the temple of Cychreus, the site of which is now thought to be occupied by the church of St. Nicholas.

The city of Salamis was demolished by the Athenians, because in the war with Cassander it surrendered to the Macedonians, from disaffection. In the second century, when it was visited by Pausanias, some ruins of the Agora or market-place remained, with a temple and image of Ajax; and not far from the port was shown a stone, on which, they related, Telamon sat to view the Salaminian ships on their departure to join the Grecian fleet at Aulis. The walls may still be traced, and it has been conjectured were about four miles in circumference. The level space within them was now covered with green corn. The port is choked with mud, and was partly dry. Among the scattered marbles are some with inscriptions. One is of great antiquity, before the introduction of the Ionic alphabet. On another, near the port, the name of Solon occurs. This renowned lawgiver was a native of Salamis, and a statue of him was erected in the market-place, with one hand covered by his vest, the modest attitude in which he was accustomed to address the people of Athens. An inscription on black marble was also copied in 1676 near the ruin of a temple, probably that of Ajax. The island of Salamis is now inhabited by a few Albanians, who till the ground. Their village is called *Ampelaki*, "the Vineyard," and is at a distance from the port, standing more inland. In the church are marble fragments and some inscriptions.

SALARY, a recompense or consideration made to a person for his pains and industry in another man's business. The word is used in the statute 23 Edw. III. cap. 1. *Salarium* at first signified the rents or profits of a sale, hall, or house (and in Gascoigne they now call the seats of the gentry *sala's*, as we do *halls*); but afterwards it was taken for any wages, stipend, or annual allowance.

SALACIA, in botany; a genus of the triginia order, belonging to the gynandria class of plants. The calyx is quinquefid; the corolla quinquepetalous; the antheræ sitting on the top of the germ.

Salacia Sale.

SALE, is the exchange of a commodity for money; barter, or permutation, is the exchange of one commodity for another. When the bargain is concluded, an obligation is contracted by the buyer to pay the value, and by the seller to deliver the commodity, at the time and place agreed on, or immediately, if no time be specified.

In this, as well as other mercantile contracts, the safety of commerce requires the utmost good faith and veracity. Therefore, although, by the laws of England, a sale, above the value of 10 l. be not binding, unless earnest be paid, or the bargain confirmed by writing, a merchant would lose all credit who refused to perform his agreement, although these legal requisites were omitted.

When a specific thing is sold, the property, even before delivery, is in some respect vested in the buyer; and if the thing perishes, the buyer must bear the loss. For example, if a horse dies before delivery, he must pay the value: but if the bargain only determines the quantity and quality of the goods, without specifying the identical articles, and the seller's warehouse, with all his goods, be burned, he is intitled to no payment. He must also bear the loss if the thing perish through his fault; or when a particular time and place of delivery is agreed on, if it perish before it be tendered, in terms of the bargain.

If a person purchase goods at a shop without agreeing for the price, he is liable for the ordinary market-price at the time of purchase.

If the buyer proves insolvent before delivery, the seller is not bound to deliver the goods without payment or security.

If the importation, or use of the commodities sold, be prohibited by law, or if the buyer knows that they were smuggled, no action lies for delivery.

The property of goods is generally presumed, in favour of commerce, to belong to the possessor, and cannot be challenged in the hands of an onerous purchaser. But to this there are some exceptions. By the Scots law, stolen goods may in all cases be reclaimed by the proprietor, and also by the English law, unless they were bought *bona fide* in open market; that is, in the accustomed public places, on stated days in the country, or in a shop in London; and horses may be reclaimed, unless the sale be regularly entered by the book-keeper of the market. In all cases, if the goods be evicted by the lawful proprietor, the seller is liable to the purchaser for the value.

Actions for payment of shop-accounts, as well as other debts not constituted by writing, are limited in England to six years. The testimony of one witness is admitted; and the seller's books, although the person that kept them be dead, are good evidence for one year. In Scotland, merchants' books may be proved within three years of the date of the last article, by one witness, and the creditor's books and oath in supplement. After three years, they can only be proved by the oath or writ of the debtor. A merchant's books are in all cases good evidence against him.

SALEP, in the materia medica, the dried root of a species of orchis. See Orchis.

Salep. Several methods of preparing ſalep have been propoſed and practiced. Geoffroy has delivered a very judicious proceſs for this purpoſe in the *Hiſtoire de l'Academie Royale des Sciences*, 1740; and Retmus, in the Swediſh Tranſactions 1764, has improved Geoffroy's method. But Mr Moult of Rochdale has lately favoured the public with a new manner of curing the orchis root; by which ſalep is prepared, at leaſt equal, if not ſuperior, to any brought from the Levant. The new root is to be waſhed in water; and the fine brown ſkin which covers it is to be ſeparated by means of a ſmall bruſh, or by dipping the root in hot water, and rubbing it with a coarſe linen cloth. When a ſufficient number of roots have been thus cleaned, they are to be ſpread on a tin-plate, and placed in an oven heated to the uſual degree, where they are to remain ſix or ten minutes, in which time they will have loſt their milky whiteneſs, and acquired a tranſparency like horn, without any diminution of bulk. Being arrived at this ſtate, they are to be removed, in order to dry and harden in the air, which will require ſeveral days to effect; or by uſing a very gentle heat, they may be finiſhed in a few hours.

Salep thus prepared, may be afforded in thoſe parts of England where labour bears a high value, at about eight-pence or ten-pence per pound: And it might be ſold ſtill cheaper, if the orchis were to be cured, without ſeparating from it the brown ſkin which covers it; a troubleſome part of the proceſs, and which does not contribute to render the root either more palatable or ſalutary. Whereas the foreign ſalep is now ſold at five or ſix ſhillings per pound.

Salep is ſaid to contain the greateſt quantity of vegetable nouriſhment in the ſmalleſt bulk. Hence a very judicious writer, to prevent the dreadful calamity of famine at ſea, has lately propoſed that the powder of it ſhould conſtitute part of the proviſions of every ſhip's company. This powder and portable ſoup, diſſolved in boiling water, form a rich thick jelly, capable of ſupporting life for a conſiderable length of time. An ounce of each of theſe articles, with two quarts of boiling water, will be ſufficient ſubſiſtence for a man a day; and as being a mixture of animal and vegetable food, muſt prove more nouriſhing than double the quantity of rice-cake, made by boiling rice in water: which laſt, however, ſailors are often obliged ſolely to ſubſiſt upon for ſeveral months; eſpecially in voyages to Guinea, when the bread and flour are exhauſted, and the beef and pork, having been ſalted in hot countries, are become unfit for uſe.

" But as a wholeſome nouriſhment (ſays Dr Percival*), rice is much inferior to ſalep. I digeſted ſeveral alimentary mixtures prepared of mutton and water, beat up with bread, ſea-biſcuit, ſalep, rice-flour, ſago-powder, potato, old cheeſe, &c. in a heat equal to that of the human body. In 48 hours they had all acquired a vinous ſmell, and were in briſk fermentation, except the mixture with rice, which did not emit many air-bubbles, and was but little changed. The third day ſeveral of the mixtures were ſweet, and continued to ferment; others had loſt their inteſtine motion, and were ſour; but the one which contained the rice was become putrid. From this experiment it appears, that rice as an aliment is ſlow of fermentation, and a very weak corrector of putrefaction. It is therefore an improper diet for hoſpital-patients; but more particularly for ſailors in long voyages; becauſe it is incapable of preventing, and will not contribute much to check, the progreſs of that fatal diſeaſe, the ſea-ſcurvy. Under certain circumſtances, rice ſeems diſpoſed of itſelf, without mixture, to become putrid; for by long keeping it ſometimes acquires an offenſive fœtor. Nor can it be conſidered as a very nutritive kind of food, on account of its difficult ſolubility in the ſtomach. Experience confirms the truth of this concluſion; for it is obſerved by the planters in the Weſt Indies, that the negroes grow thin, and are leſs able to work, whilſt they ſubſiſt upon rice.

" Salep has the ſingular property of concealing the taſte of ſalt water; a circumſtance of the higheſt importance at ſea, when there is a ſcarcity of freſh water. I diſſolved a dram and a half of common ſalt in a pint of the mucilage of ſalep, ſo liquid as to be potable, and the ſame quantity in a pint of ſpring-water. The ſalep was by no means diſagreeable to the taſte, but the water was rendered extremely unpalatable. This experiment ſuggeſted to me the trial of the orchis root as a corrector of acidity, a property which would render it a very uſeful diet for children. But the ſolution of it, when mixed with vinegar, ſeemed only to dilute like an equal proportion of water, and not to cover its ſharpneſs. Salep, however, appears by my experiments to retard the acetous fermentation of milk; and conſequently would be a good lithing for milk-pottage, eſpecially in large towns, where the cattle being fed upon ſour draff muſt yield aceſcent milk.

" Salep in a certain proportion, which I have not yet been able to aſcertain, would be a very uſeful and profitable addition to bread. I directed one ounce of the powder to be diſſolved in a quart of water, and the mucilage to be mixed with a ſufficient quantity of flour, ſalt, and yeaſt. The flour amounted to two pounds, the yeaſt to two ounces, and the ſalt to 80 grains. The loaf when baked was remarkably well fermented, and weighed three pounds two ounces. Another loaf, made with the ſame quantity of flour, &c. weighed two pounds and 12 ounces; from which it appears that the ſalep, though uſed in ſo ſmall a proportion, increaſed the gravity of the loaf ſix ounces, by abſorbing and retaining more water than the flour alone was capable of. Half a pound of flour and an ounce of ſalep were mixed together, and the water added according to the uſual method of preparing bread. The loaf when baked weighed 13 ounces and an half; and would probably have been heavier if the ſalep had been previouſly diſſolved in about a pint of water. But it ſhould be remarked, that the quantity of flour uſed in this trial was not ſufficient to conceal the peculiar taſte of the ſalep.

" The reſtorative, mucilaginous, and demulcent qualities of the orchis root, render it of conſiderable uſe in various diſeaſes. In the ſea-ſcurvy it powerfully obtunds the acrimony of the fluids, and at the ſame time is eaſily aſſimilated into a mild and nutritious chyle. In diarrhœas and the dyſentery it is highly ſerviceable, by ſheathing the internal coat of the inteſtines, by abating irritation, and gently correcting putrefaction. In the ſymptomatic fever, which ariſes from the abſorption of pus from ulcers in the lungs, from wounds, or from amputation, ſalep uſed plentifully is an admirable demul-

cent,

* Eſſays Medical and Experimental.

Salerno & Salicornia.

cent, and well adapted to reſiſt the diſſolution of the craſis of the blood, which is ſo evident in theſe caſes. And by the ſame mucilaginous quality, it is equally efficacious in the ſtrangury and dyſury; eſpecially in the latter, when ariſing from a venereal cauſe, becauſe the diſcharge of urine is then attended with the moſt exquiſite pain, from the ulceration about the neck of the bladder and through the courſe of the urethra. I have found it alſo an uſeful aliment for patients who labour under the ſtone or gravel." The ancient chemiſts appear to have entertained a very high opinion of the orchis root, as appears from the *ſecreta ſecretorum* of Raymund Lully, a work dated 1565.

SALERNO, an ancient and conſiderable town of Italy, in the kingdom of Naples, and capital of the Hither Principato, with an archbiſhop's ſee, a caſtle, harbour, and an univerſity chiefly for medicine. It is ſeated at the bottom of a bay of the ſame name. E. Long. 14. 43. N. Lat. 40. 45.

SALET, in war, a light covering or armour for the head, anciently worn by the light-horſe, only different from the caſque in that it had no creſt and was little more than a bare cap.

SALIANT, in fortification, denotes projecting. There are two kinds of angles, the one ſaliant, which have their point outwards; the other re-entering, which have their points inwards.

SALIANT, SALIENT, or SAILLANT, in heraldry, is applied to a lion, or other beaſt, when its fore-legs are raiſed in a leaping poſture.

SALIC, or SALIQUE, LAW, *(Lex Salica)*, an ancient and fundamental law of the kingdom of France, uſually ſuppoſed to have been made by Pharamond, or at leaſt by Clovis; in virtue whereof males only are to inherit.

Some, as Poſtellus, would have it to have been called *Salic*, q. d. *Gallic*, becauſe peculiar to the Gauls. For Montanus inſiſts, it was becauſe Pharamond was at firſt called *Salicus*. Others will have it to be ſo named, as having been made for the ſalic lands. Theſe were noble fiefs which their firſt kings uſed to beſtow on the ſallians, that is, the great lords of their ſalle or court, without any other tenure than military ſervice; and for this reaſon, ſuch fiefs were not to deſcend to women, as being by nature unfit for ſuch a tenure. Some, again, derive the origin of this word from the Salians, a tribe of Franks that ſettled in Gaul in the reign of Julian, who is ſaid to have given them lands on condition of their perſonal ſervice in war. He even paſſed the conditions into a law, which the new conquerors acquieſced in, and called it *ſalic*, from the name of their former countrymen.

SALICORNIA, JOINTED GLASS-WORT, or *Saliwort*: A genus of the monogynia order, belonging to the monandria claſs of plants; and in the natural method ranking under the 12th order, *Holoraceæ*. The calyx is ventricoſe, or a little ſwelling out and entire; there are no petals, and but one ſeed. There are four ſpecies, of which the moſt remarkable are, 1. The fruticoſa, with obtuſe points, grows plentifully in moſt of the ſalt marſhes which are overflowed by the tides in many parts of England. It is an annual plant, with thick, ſucculent, jointed ſtalks, which trail upon the ground. The flowers are produced at the ends of the joints toward the extremity of the branches, which are ſmall, and ſcarce diſcernible by the naked eye. 2. The perennis, with a ſhrubby branching ſtalk, grows naturally in Sheppey iſland. This hath a ſhrubby branching ſtalk about ſix inches long; the points of the articulations are acute; the ſtalks branch from the bottom, and form a kind of pyramid. They are perennial, and produce their flowers in the ſame manner as the former.

Sal. Salino.

The inhabitants near the ſea-coaſts where theſe plants grow, cut them up toward the latter end of ſummer, when they are fully grown; and, after having dried them in the ſun, they burn them for their aſhes, which are uſed in making of glaſs and ſoap. Theſe herbs are by the country people called *kelp*, and promiſcuouſly gathered for uſe. See the article SALSOLA; alſo *Dyeing of* LEATHER, p. 750. note A.

SALII, in Roman antiquity, prieſts of Mars, whereof there were 12, inſtituted by Numa, wearing painted, particoloured garments, and high bonnets; with a ſteel cuiraſſe on the breaſt. They were called *ſalii*, from *ſaltare* "to dance;" becauſe, after aſſiſting at ſacrifices, they went dancing about the ſtreets, with bucklers in their left-hand, and a rod in their right, ſtriking muſically with their rods on one another's bucklers, and ſinging hymns in honour of the gods.

SALINO, one of the Lipari iſlands, ſituated between Sicily and Italy, conſiſts of two mountains both in an high ſtate of cultivation. The one lying more towards the north than the other is rather the higheſt of the two, and is called *del Capo*, "the head." The other is called *della Foſſa felice*, or "the happy valley." One-third of the extent of theſe hills from the bottom to the ſummit is one continued orchard, conſiſting of vines, olive, fig, plum, apricot, and a vaſt diverſity of other trees. The white roofs of the houſes, which are every where interſperſed amid this diverſity of verdure and foliage, contribute to variegate the proſpect in a very agreeable manner. The back part of almoſt all the houſes is ſhaded by an arbour of vines, ſupported by pillars of brick, with croſs poles to ſuſtain the branches and foliage of the vines. Thoſe arbours ſhelter the houſes from the rays of the ſun, the heat of which is quite ſcorching in theſe ſouthern regions. The vines are extremely fruitful; the poles bending under the weight of the grapes.

The ſcenes in this iſland are more intereſting to the lover of natural hiſtory than to the antiquarian. See RETICULUM.

On the ſouth ſide of the iſland, however, there are ſtill to be ſeen ſome fine ruins of an ancient bath, a Roman work. They conſiſt of a wall of 10 or 11 fathoms in extent, and terminating in an arch of no great height, of which only a ſmall part now remains. The building ſeems to have been reduced to its preſent ſtate rather by the ravages of men than the injuries of time. Almoſt all the houſes in the iſland are built of materials which have belonged to ancient monuments. The ancients had, in all probability, baths of freſh as well as of ſalt water in this iſland; for whenever the preſent inhabitants have occaſion for a ſpring of freſh water, they have only to dig a pit on the ſhore, and pure ſweet water flows in great abundance.

There were formerly mines of alum here, from which the inhabitants drew a very conſiderable yearly revenue. But whether they are exhauſted, or whatever circumſtance may have cauſed them to be given up, they are

Salisbury. now no longer known. The island abounds in a variety of fruits.

On the east side it is very populous. There are two places which are both called *Lingua* "the tongue," and which contain a good number of inhabitants; the one is near Salino, the other is distinguished by the name of *St. Marina:* there are besides these two other villages. All these places together may contain about 4000 inhabitants: the circumference of the island may be about 14 miles.

SALISBURY, the capital of the county of Wiltshire in England, situated in W. Long. 1. 55. N. Lat. 51. 3. This city owed its first rise to its cathedral, which was begun in 1219, and finished in 1258. According to an estimate delivered in to Henry III. it cost forty thousand marks. It is a Gothic building, and is certainly the most elegant and regular in the kingdom. The doors and chapels are equal in number to the months, the windows to the days, and the pillars and pilastres to the hours in a year. It is built in the form of a lantern, with a spire in the middle, and nothing but buttresses and glass windows on the outside. The spire is the highest in the kingdom, being 410 feet, which is twice the height of the monument in London. The pillars and pilastres in the church are of fusile marble; the art of making which is now either entirely lost or little known. This magnificent church has lately undergone most beautiful alterations; with an addition of two fine windows, and an organ presented by the king. The roof of the chapter-house, which is 50 feet in diameter, and 150 in circumference, bears all upon one slender pillar, which is such a curiosity as can hardly be matched in Europe. The turning of the western road through the city in the reign or Edward III. was a great advantage to it. The chancellorship of the most noble order of the garter, which is annexed to this see, was first conferred on bishop Richard Beauchamp. The hospital of St. Michael's, near this city, was founded by one of its bishops. Dr. Seth Ward, bishop of this see in the reign of Charles II. contributed greatly to the making the river Avon navigable to Christ church in Hampshire. The same prelate in 1683, built an hospital for the entertainment of the widows of poor clergymen. There are three other churches beside the cathedral, which is without the liberty of the city, and a greater number of boarding schools, especially for young ladies, than in any other town in England. Here is a manufacture of druggets, flannels, bone-lace, and those cloths called *Salisbury whites*; in consideration of which, and its fairs, markets, assizes, boarding-schools, and clergy, the city may be justly said to be in a flourishing condition. It was incorporated by Henry III. and is governed by a mayor, high-steward, recorder, deputy-recorder, 24 aldermen, and 30 assistants or common council men. The number of souls is about 10,000. A new council chamber is just now (June 1794) building here with proper courts of justice, by the earl of Radnor; to which Mr. Hussey is also a great benefactor. That quarter called the *close*, where the canons and prebendaries live, is like a fine city of itself. Here is an assembly for the ladies every Tuesday, and coaches set out from hence to London every day. In this town are several charity-schools; the expence of one of them is entirely defrayed by the bishop. The city gives the title of earl to the noble family of Cecil.

Salisbury Plain, the extensive downs in Wiltshire, which are thus denominated, form in summer one of the most delightful parts of Great Britain for extent and beauty. It extends 28 miles west of Weymouth, and 25 east to Winchester; and in some places is near 40 miles in breadth. That part about Salisbury is a chalky down, and is famous for feeding numerous flocks of sheep. Considerable portions of this tract are now enclosing, the advantages of which are so great, that we hope the whole will undergo so beneficial an alteration.

Saliva ‖ Salix.

SALIVA, is that fluid by which the mouth and tongue are continually moistened in their natural state; and is supplied by glands which form it, that are called *salivary glands*. This humour is thin and pellucid, incapable of being concreted by the fire, almost without taste and smell. By chewing, it is expressed from the glands which separate it from the blood, and is intimately mixed with our food, the digestion of which it greatly promotes. In hungry persons it is acrid, and copiously discharged; and in those who have fasted long it is highly acrid, penetrating, and resolvent. A too copious evacuation of it, produces thirst, loss of appetite, bad digestion, and an atrophy.

SALIVATION, in medicine, a promoting of the flux of saliva, by means of medicines, mostly by mercury. The chief use of salivation is in diseases belonging to the glands and membrana adiposa, and principally in the cure of the venereal disease; though it is sometimes also used in epidemic diseases, cutaneous diseases, &c. whose crises tend that way.

SALIX, the WILLOW, in botany: A genus of the diandria order, belonging to the dioecia class of plants; and in the natural method ranking under the 50th order, *Amentaceæ*. The amentum of the male is scaly; there is no corolla; but a nectariferous glandule at the base of the flower. The female amentum is scaly; there is no corolla; the style bifid; the capsule unilocular and bivalved; the seeds pappous. The willow trees have been frequently the theme of poetical description, both in ancient and modern times. In Virgil, Horace, and in Ovid, we have many exquisite allusions to them and their several properties; and for a melancholy lover or a contemplative poet, imagination cannot paint a fitter retreat than the banks of a beautiful river, and the shade of a drooping willow There are 31 species; of which the most remarkable are, 1. The caprea, or common sallow-tree, grows to but a moderate height, having smooth, dark-green, brittle branches: oval, waved, rough leaves, indented at top, and woolly underneath. It grows abundantly in Great Britain, but more frequently in dry than moist situations: it is of a brittle nature, so is unfit for the basket-makers; but will serve for poles, stakes, and to lop for fire-wood; and its timber is good for many purposes. 2. The alba, white, or silver-leaved willow, grows to a great height and considerable bulk, having smooth pale-green shoots; long, spear-shaped, acuminated, sawed, silvery-white leaves, being downy on both sides, with glands below the serratures. This is the common white willow, which grows abundantly about towns and villages, and by the sides of rivers and brooks, &c. 3. The vitellina, yellow or golden willow, grows

Salix, Sallee.

grows but to a moderate height; having yellow, very pliant ſhoots; oval, acute, ſerrated, very ſmooth leaves, with the ſerratures cartilaginous, and with callous punctures on the footſtalks. 4. The purpurea, purple, or red willow, grows to a large height, having long, reddiſh, very pliable ſhoots, and long ſpear-ſhaped, ſerrated, ſmooth leaves, the lower ones being oppoſite. 5. The viminalis, or oſier-willow, grows but a moderate height, having ſlender rod-like branches; very long, pliant, greeniſh ſhoots; and very long, narrow, ſpear-ſhaped, acute, almoſt entire leaves, hoary, and ſilky underneath. 6. The pentandria, pentandrous, broad-leaved, ſweet-ſcented willow, grows to ſome conſiderable ſtature, having browniſh-green branches; oblong, broad, ſerrated, ſmooth, ſweet-ſcented leaves, ſhining above; and pentandrous flowers. 7. The triandria, or triandrous willow, grows to a large ſtature, having numerous, erect, greyiſh-green branches, and pliant ſhoots; oblong, acute-pointed, ſerrated ſmooth, ſhining-green leaves, eared at the baſe; and triandrous flowers. 8. The fragilis, fragile, or crack-willow, riſes to a middling ſtature, with browniſh, very fragile, or brittle branches, long, oval-lanceolate, ſawed, ſmooth leaves of a ſhining-green on both ſides, having dentated glandular foot-ſtalks. This ſort in particular being exceedingly fragile, ſo that it eaſily cracks and breaks, is unfit for culture in oſier-grounds. 8. The Babylonica, Babylonian pendulous ſalix, commonly called *weeping willow*, grows to a largiſh ſize, having numerous, long, ſlender, pendulous branches, hanging down looſely all round in a curious manner, and long, narrow, ſpear-ſhaped, ſerrated, ſmooth leaves. This curious willow is a native of the eaſt, and is retained in our hardy plantations for ornament, and exhibits a moſt agreeable variety; particularly when diſpoſed ſingly by the verges of any piece of water, or in ſpacious openings of graſs-ground.

All the ſpecies of ſalix are of the tree kind, very hardy, remarkable faſt growers, and ſeveral of them attaining a conſiderable ſtature when permitted to run up to ſtandards. They are moſtly of the aquatic tribe, being generally the moſt abundant and of moſt proſperous growth in watery ſituations: they however will grow freely almoſt any where, in any common ſoil and expoſure; but grow conſiderably the faſteſt and ſtrongeſt in low moiſt land, particularly in marſhy ſituations, by the verges of rivers, brooks, and other waters; likewiſe along the ſides of watery ditches, &c. which places often lying waſte, may be employed to good advantage, in plantations of willows, for different purpoſes.

SALLEE, an ancient and conſiderable town of Africa in the kingdom of Fez, with a harbour and ſeveral ports. The harbour of Sallee is one of the beſt in the country; and yet, on account of a bar that lies acroſs it, ſhips of the ſmalleſt draught are forced to unload and take out their guns before they can get into it. There are docks to build ſhips; but they are hardly ever uſed, for want of ſkill and materials. It is a large place, divided into the Old and New Towns, by the river Guero. It has long been famous for its rovers or pirates, who make prizes of all the chriſtian ſhips that come in their way, except there is a treaty to the contrary. The town of Sallee in its preſent ſtate, though large, preſents nothing worthy the obſervation of the traveller except a battery of 24 pieces of cannon fronting the ſea, and a redoubt at the entrance of the river, which is about a quarter of a mile broad, and penetrates ſeveral miles into the interior country. W. Long. 6. 30. N Lat. 34. 0.

Sallee Sallouſtius.

SALLET, or Sallad, a diſh of eatable herbs, ordinarily accompanying roaſt meat; compoſed chiefly of crude, freſh herbage, ſeaſoned with ſalt, oil, and vinegar

Menage derives the word from the Latin *ſalata*; of *ſal*, "ſalt;" others from *ſaletudo*; Du-Cange from *ſalgama*, which is uſed in Auſonius and Columella in the ſame ſenſe.

Some add muſtard, hard eggs, and ſugar; others, pepper, and other ſpices, with orange-peel, ſaffron, &c.

The principal ſallet-herbs, and thoſe which ordinarily make the baſis of our Engliſh ſallets, are lettuce, celery, endive, creſſes, radiſh, and rape; along with which, by way of furniture, or additionals, are uſed purſlane, ſpinach, ſorrel, tarragon, burnet, corn-ſallet, and chervil.

The gardeners call ſome plants *ſmall herbs* in ſallets; theſe ſhould always be cut while in the ſeed-leaf: as creſſes, muſtard, radiſh, turnep, ſpinach, and lettuce; all which are raiſed from ſeeds ſown in drills, or lines, from the middle of February to the end of March, under glaſſes or frames; and thence to the middle of May, upon natural beds, warmly expoſed; and during the ſummer heats in more ſhady places; and afterwards in September, as in March, &c.; and laſtly, in the rigour of the winter, in hot-beds. If they chance to be frozen in very froſty weather, putting them in ſpring-water two hours before they be uſed, recovers them.

SALLO (Denis de), a French writer, famous for being the projector of literary journals, was born at Paris in 1626. He ſtudied the law, and was admitted a counſellor in the parliament of Paris in 1652. It was in 1664 he ſchemed the plan of the *Journal des Sçavans*; and the year following began to publiſh it under the name of Sieur de Heronville, which was that of his valet de chambre. But he played the critic ſo ſeverely, that authors, ſurpriſed at the novelty of ſuch attacks, retorted ſo powerfully, that M. de Sallo, unable to weather the ſtorm, after he had publiſhed his third Journal, declined the undertaking, and turned it over to the abbé Gallois; who, without preſuming to criticiſe, contented himſelf with merely giving titles, and making extracts. Such was the origin of literary journals, which afterwards ſprang up in other countries under different titles; and the ſucceſs of them, under judicious management, is a clear proof of their utility. M. de Sallo died in 1669.

SALLUSTIUS (Caius Criſpus), a celebrated Roman hiſtorian, was born at Amiternum, a city of Italy, in the year of Rome 669, and before Chriſt 85. His education was liberal, and he made the beſt uſe of it. His Roman Hiſtory in ſix books, from the death of Sylla to the conſpiracy of Catiline, the great work from which he chiefly derived his glory among the ancients, is unfortunately loſt excepting a few fragments; but his two detached pieces of Hiſtory which happily remain entire, are ſufficient to juſtify the great encomiums he has received as a writer.—He has had the ſingular honour to be twice tranſlated by a royal hand: firſt by Queen Elizabeth, according to Camden,

and

Salmaſius. and ſecondly, by the preſent Infant of Spain, whoſe version of this elegant hiſtorian, lately printed in folio, is one of the moſt beautiful books that any country has produced ſince the invention of printing. No man has inveighed more ſharply againſt the vices of his age than this hiſtorian; yet no man had leſs pretenſions to virtue than he. His youth was ſpent in a moſt lewd and profligate manner; and his patrimony almoſt ſquandered away when he had ſcarcely taken poſſeſſion of it. Marcus Varro, a writer of undoubted credit, relates, in a fragment preſerved by Aulus Gellius, that Salluſt was actually caught in bed with Fauſta the daughter of Sylla, by Milo her huſband; who ſcourged him very ſeverely, and did not ſuffer him to depart till he had redeemed his liberty with a conſiderable ſum. A. U. C. 694, he was made queſtor, and in 702 tribune of the people; in neither of which places is he allowed to have acquitted himſelf at all to his honour. By virtue of his queſtorſhip, he obtained an admiſſion into the ſenate; but was expelled thence by the cenſors in 704, on account of his immoral and debauched way of life. In the year 705 Cæſar reſtored him to the dignity of a ſenator; and to introduce him into the houſe with a better grace, made him queſtor a ſecond time. In the adminiſtration of this office he behaved himſelf very ſcandalouſly; expoſed every thing to ſale that he could find a purchaſer for; and if we may believe the author of the invective, thought nothing wrong which he had a mind to do: *Nihil non venale habuerit, cujus aliquis emptor fuit, nihil non æquum et verum duxit, quod ipſi facere collibuiſſet.* In the year 707, when the African war was at an end, he was made prætor for his ſervices to Cæſar, and ſent to Numidia. Here he acted the ſame part as Verres had done in Sicily; outrageouſly plundered the province; and returned with ſuch immenſe riches to Rome, that he purchaſed a moſt magnificent building upon mount Quirinal, with thoſe gardens which to this day retain the name of *Salluſtian gardens*, beſides his country houſe at Tivoli. How he ſpent the remaining part of his life, we have no account from ancient writers. Euſebius tells us, that he married Terentia, the divorced wife of Cicero; and that he died at the age of 50, in the year 710, which was about four years before the battle of Actium. Of the many things which he wrote, beſide his Hiſtories of the Catilinarian and Jugurthine wars, we have ſome orations or ſpeeches, printed with his fragments.

SALLY-PORTS, in fortification, or *Poſtern-Gates*, as they are ſometimes called, are thoſe under-ground paſſages which lead from the inner works to the outward ones; ſuch as from the higher flank to the lower, or to the tenailles, or the communication from the middle of the curtain to the ravelin. When they are made for men to go through only, they are made with ſteps at the entrance and going out. They are about 6 feet wide and 8½ feet high. There is alſo a gutter or ſhore made under the ſally-ports, which are in the middle of the curtains, for the water which runs down the ſtreets to paſs into the ditch; but this can only be done when they are wet ditches. When ſally-ports ſerve to carry guns through them for the out-works, inſtead of making them with ſteps, they muſt have a gradual ſlope, and be 8 feet wide.

SALMASIUS (Claudius), a French writer of uncommon abilities and immenſe erudition, deſcended from an ancient and noble family, and born at or near Semur in 1596. His mother, who was a proteſtant, infuſed her notions of religion into him, and he at length converted his father: he ſettled at Leyden; and in 1650 paid a viſit to Chriſtina queen of Sweden, who is reported to have ſhewn him extreordinary marks of regard. Upon the violent death of Charles I. of England, he was prevailed on by the royal family, then in exile, to write a defence of that king; which was anſwered by the famous Milton in 1651, in a work entitled *Defenſio pro Populo Anglicano contra Claudii Salmaſii Defenſionem Regiam.* This book was read over all Europe; and conveyed ſuch a proof of the writer's abilities, that he was reſpected even by thoſe who hated his principles. Salmaſius died in 1653; and ſome did not ſcruple to ſay, that Milton killed him by the acuteneſs of his reply. His works are numerous, and of various kinds; but the greateſt monuments of his learning are, his *Notæ in Hiſtoriæ Auguſtæ Scriptores*, and his *Exercitationes Plinianæ in Solinum.* Salmaſius, Salmo.

SALMO, the SALMON; a genus of the order of abdominales. The head is ſmooth, and furniſhed with teeth and a tongue; the rays of the gills are from four to ten; the back-fin is fat behind; and the belly-fins have many rays. There are 29 ſpecies; of which the moſt remarkable are,

1. The ſalar, or common ſalmon, is a northern fiſh, being unknown in the Mediterranean ſea and other warm climates: it is found in France in ſome of the rivers that empty themſelves into the ocean, and north as far as Greenland; they are alſo very common in Newfoundland, and the northern parts of North America. Salmons are taken in the rivers of Kamtſchatka; but whether they are of the ſame ſpecies with the European kind, is not very certain. They are in ſeveral countries a great article of commerce, being cured different ways, by ſalting, pickling, and drying: there are ſtationary fiſheries in Iceland, Norway, and the Baltic; but we believe no where greater than thoſe at Colraine in Ireland; and in Great Britain at Berwick, and in ſome of the rivers in Scotland. In the Hiſtory of Cumberland, we are told that "they depoſit their ſpawn even on the upper ſide of Pooley-bridge, but always in the ſtream of Eamont. At thoſe times it is not an eaſy matter to drive them away by throwing ſtones at them. They will take a bait of roe, or ſmall fiſh, while upon the rud, or laying their ſpawn. We have never heard of a ſalmon or ſalmon ſmelt being ſeen in the lake. They go up the river Derwent in September, through the lake of Baſſenthwaite, up the river which runs through Keſwick into the vale of St John, where they depoſit their ſpawn in the ſmall ſtreams nnd feeders of the lake. The young ſalmon are called *ſalmon ſmelts*, and go down to the ſea with the firſt floods in May."

The ſalmon was known to the Romans, but not to the Greeks. Pliny ſpeaks of it as a fiſh found in the rivers of Aquitaine; Auſonius enumerates it among thoſe of the Moſel. The ſalmon is a fiſh that lives both in the ſalt and freſh waters; quitting the ſea at certain ſeaſons for the ſake of depoſiting its ſpawn, in ſecurity, in the gravelly beds of rivers remote from their mouths. There are ſcarce any difficulties but what they will overcome, in order to arrive at places fit for their

Salmo. their purpoſe: they will aſcend rivers hundreds of miles, force themſelves againſt the moſt rapid ſtreams, and ſpring with amazing agility over cataracts of ſeveral feet in height. Salmon are frequently taken in the Rhine as high up as Baſil; they gain the ſources of the Lapland rivers in ſpite of their torrent-like currents, and ſurpaſs the perpendicular falls of Leixlip, Kenneth, and Pont Aberglaſlyn. It may here be proper to contradict the vulgar error, of their taking their tail in their mouth when they attempt to leap; ſuch as Mr Pennant ſaw, ſprung up quite ſtraight, and with a ſtrong tremulous motion.

The ſalmon is a fiſh ſo generally known, that a very brief deſcription will ſerve. The largeſt we ever heard of weighed 74 pounds. The colour of the back and ſides are grey, ſometimes ſpotted with black, ſometimes plain: the covers of the gills are ſubject to the ſame variety; the belly ſilvery; the noſe ſharp-pointed; the end of the under jaw in the males often turns up in the form of a hook; ſometimes this curvature is very conſiderable: it is ſaid that they loſe this hook when they return to the ſea. The teeth are lodged in the jaws and on the tongue, and are ſlender, but very ſharp; the tail is a little forked.

2. The trutta, or ſea-trout, migrates like the true ſalmon up ſeveral of our rivers; ſpawns, and returns to the ſea. That deſcribed by Mr Pennant was taken in the Tweed below Berwick, June 1769. The ſhape was more thick than the common trout; the weight three pounds two ounces. The irides ſilver; the head thick, ſmooth, and duſky, with a gloſs of blue and green; the back of the ſame colour, which grows fainter towards the ſide-line. The back is plain, but the ſides, as far as the lateral line, are marked with large diſtinct irregular ſhaped ſpots of black: the lateral line ſtraight; the ſides beneath the line, and the belly, are white. Tail broad, and even at the end. The dorſal fin had 12 rays; the pectoral 14; the ventral 9; the anal 10. The fleſh when boiled is of a pale red, but well-flavoured.

3. The fario, or trout; the colours of which vary greatly in different waters, and in different ſeaſons. Trouts differ alſo in ſize. One taken in Llynallet, Denbighſhire, which is famous for an excellent kind, meaſured 17 inches, its depth three and three-quarters, its weight one pound ten ounces; the head thick; the noſe rather ſharp; the upper jaw a little longer than the lower; both jaws, as well as the head, were of a pale brown, blotched with black; the teeth ſharp and ſtrong, diſpoſed in the jaws, roof of the mouth, and tongue. The back was duſky; the ſides tinged with a purpliſh bloom, marked with deep purple ſpots, mixed with black above and below the ſide-line, which was ſtrait; the belly white. The firſt dorſal fin was ſpotted; the ſpurious fin brown, tipped with red; the pectoral, ventral, and anal fins, of a pale brown; the edges of the anal fin white; the tail very little forked when extended.—The ſtomachs of the common trouts are uncommonly thick and muſcular. They feed on the ſhell-fiſh of lakes and rivers, as well as on ſmall fiſh. They likewiſe take into their ſtomachs gravel or ſmall ſtones, to aſſiſt in comminuting the teſtaceous parts of their food. The trouts of certain lakes in Ireland, ſuch as thoſe of the province of Galway and ſome others, are remarkable for the great thickneſs of their ſtomachs, which, from ſome ſlight reſemblance to the organs of digeſtion in birds, have been called *gizzards*; the Iriſh name the ſpecies that has them *gillaroo trouts*. Theſe ſtomachs are ſometimes ſerved up to table under the former appellation. Trouts are moſt voracious fiſh, and afford excellent diverſion to the angler. The paſſion for the ſport of angling is ſo great in the neighbourhood of London, that the liberty of fiſhing in ſome of the ſtreams in the adjacent counties is purchaſed at the rate of 10l. *per annum*. Theſe fiſh ſhift their quarters to ſpawn; and, like ſalmon, make up towards the heads of rivers to depoſit their roes. The under jaw of the trout is ſubject, at certain times, to the ſame curvature as that of the ſalmon.

Salmo.

"It is caught (ſay the editors of the Hiſtory of Cumberland) in very great plenty at all ſeaſons of the year; one weighing a pound and a half is an uſual ſize, though ſome are caught of 4 lb. weight. Five or ſix ounces is a common weight; the largeſt are commonly the beſt for the table, when they cut of a deep ſalmon colour. In the winter months great quantities are potted along with the charre, and ſent to London, &c.—The angler, on a favourable day, here enjoys his diverſion in higher perfection than in moſt places. A trout occaſionally ſtrays out of the Eamont into the lake, and *vice verſa*, out of the lake into the river. They are eaſily diſtinguiſhed by their ſpots; and it is obſerved, that a fiſh taken from its uſual place is not in ſo good a condition as one of equal length taken on its own ground; hence it is probable, that they do not emigrate, except when diſeaſed or ſpawning. Geld fiſh (thoſe without ſpawn) are the firmeſt and beſt. They have been taken out of a ſolid piece of ice, in which they were frozen, as it were in a caſe, perfectly uninjured, after an impriſonment of ſeveral hours."

4. The ſpecies, called from its colour the *white*, migrates out of the ſea into the river Eſk in Cumberland, from July to September. When dreſſed, their fleſh is red, and moſt delicious eating. They have, on their firſt appearance from the ſalt-water, the *lernæa ſalmonea*, or ſalmon louſe adhering to them. They have both milt and ſpawn; but no fry has as yet been obſerved. This is the fiſh called by the Scots *phinocs*. They never exceed a foot in length. The upper jaw is a little longer than the lower; in the firſt are two rows of teeth, in the laſt one: on the tongue are ſix teeth. The back is ſtraight: the whole body of an elegant form; the lateral line is ſtraight; colour, between that and the top of the back, duſky and ſilvery intermixed; beneath the line, of an exquiſite whiteneſs; firſt dorſal fin ſpotted with black: tail black, and much forked.

5. The ſamlet is the leaſt of the trout kind; is frequent in the Wye, in the upper part of the Severn, and the rivers that run into it, in the north of England, and in Wales. It is by ſeveral imagined to be the fry of the ſalmon; but Mr Pennant diſſents from that opinion. See his *Brit. Zool.* III. 303.

This ſpecies has a general reſemblance to the trout, therefore muſt be deſcribed comparatively. 1*ſt*. The head is proportionably narrower, and the mouth leſs than that of the trout. 2*dly*. Their body is deeper. 3*dly*. They ſeldom exceed ſix or ſeven inches in length; at moſt, eight and a half. 4*thly*. The pectoral fins have generally

Salmo. generally but one large black ſpot, though ſometimes a ſingle ſmall one attends it; whereas the pectoral fins of the trout are more numerouſly marked. *5thly*, The ſpurious or fat fin on the back is never tipped with red; nor is the edge of the anal fin white. *6thly*, The ſpots on the body are fewer, and not ſo bright: It is alſo marked from the back to the ſides with ſix or ſeven large bluiſh bars; but this is not a certain character, as the ſame is ſometimes found in young trouts. *7thly*, The tail of the ſamlet is much more forked than that of the trout. Theſe fiſh are very frequent in the rivers of Scotland, where they are called *pars*. They are alſo common in the Wye, where they are known by the name of *ſkirlings*, or *laſprings*.

6. The alpinus, or red charr (umbla minor, or caſe charr of Pennant), is an inhabitant of the lakes of the north, and of thoſe of the mountainous parts of Europe. It affects clear and pure waters, and is very rarely known to wander into running ſtreams, except into ſuch whoſe bottom is ſimilar to the neighbouring lake. It is found in vaſt abundance in the cold lakes on the ſummits of the Lapland Alps, and is almoſt the only fiſh that is met with in any plenty in thoſe regions; where it would be wonderful how they ſubſiſted, had not Providence ſupplied them with innumerable larvæ of the gnat kind: theſe are food to the fiſh, who in their turn are a ſupport to the migratory Laplanders, in their ſummer-voyages to the diſtant lake. In ſuch excurſions thoſe vacant people find a luxurious and ready repaſt in theſe fiſh, which they dreſs and eat without the addition of ſauces; for exerciſe and temperance render uſeleſs the inventions of epicuriſm. There are but few lakes in Great Britain that produce this fiſh; and even thoſe not in any abundance. It is found in Ullſwater and Windermere in Weſtmoreland; in Llyn Quellyn, near the foot of Snowdon; and, before the diſcovery of the copper mines, in thoſe of Llynberris; but the mineral ſtreams have entirely deſtroyed the fiſh in the laſt lakes. In Scotland it is found in Loch Inch, and other neighbouring lakes, and is ſaid to go into the Spey to ſpawn.

"The largeſt and moſt beautiful we ever received (ſays Mr Pennant) were taken in Windermere, and were communicated by the Rev Mr Fariſh of Carliſle, with an account of their natural hiſtory. He ſent five ſpecimens; two under the name of the *caſe charr*, male and female; another he called the *geld charr*, i. e. a charr which had not ſpawned the preceding ſeaſon, and on that account is reckoned to be in the greateſt perfection. The two others were inſcribed, the *red charr*, the *ſilver* or *gild charr*, the *carpia lacus benaci*, Raii *Syn. Piſc.* 66. which laſt are in Weſtmoreland diſtinguiſhed by the epithet *red*, by reaſon of the fleſh aſſuming a higher colour than the other when dreſſed.

"The umbla minor, or caſe charr, ſpawns about Michaelmas, and chiefly in the river Brathy, which uniting with another called the *Rowthay*, about a quarter of a mile above the lake, they both fall into it together. The Brathy has a black rocky bottom; the bottom of the Rowthay is a bright ſand, and into this the charr are never obſerved to enter. Some of them, however, ſpawn in the lake; but always in ſuch parts of it which are ſtony, and reſemble the channel of the Brathy. They are ſuppoſed to be in the higheſt perfection about May, and continue ſo all the ſummer; yet are rarely caught after April. When they are ſpawning in the river they will take a bait, but at no other time; being commonly taken, as well as the other ſpecies, in what they call *breaſt-nets*, which are in length about 24 fathoms, and about five where broadeſt.—The ſeaſon which the other ſpecies ſpawn in is from the beginning of January to the end of March. They are never known to aſcend the rivers, but always in thoſe parts of the lake which are ſpringy, where the bottom is ſmooth and ſandy, and the water warmeſt. The fiſhermen judge of this warmth, by obſerving that the water ſeldom freezes in the places where they ſpawn except in intenſe froſts, and then the ice is thinner than in other parts of the lake. They are taken in greateſt plenty from the end of September to the end of November; at other times they are hardly to be met with. This ſpecies is much more eſteemed for the table than the other, and is very delicate when potted. The length of the red charr to the diviſion in its tail was 12 inches; its biggeſt circumference almoſt 7. The firſt dorſal fin was five inches and three-quarters from the tip of its noſe, and conſiſted of 12 branched rays, the firſt of which was ſhort, the fifth the longeſt; the fat fin was very ſmall. Each of the five fiſh had double noſtrils, and ſmall teeth in the jaws, roof of the mouth, and on the tongue.—The jaws of the caſe charr are perfectly even; on the contrary, thoſe of the red charr were unequal, the upper jaw being the broadeſt, and the teeth hung over the lower, as might be perceived on paſſing the finger over them.—The geld or barren charr was rather more ſlender than the others, as being without ſpawn. The back was of a gloſſy duſky blue; the ſides ſilvery, mixed with blue, ſpotted with pale red; the ſides of the belly were of a pale red, the bottom white. The tails of each bifurcated."

7. The thymallus, or grayling, haunts clear and rapid ſtreams, and particularly thoſe that flow through mountainous countries. It is found in the rivers of Derbyſhire; in ſome of thoſe of the north; in the Tame near Ludlow; in the Lug, and other ſtreams near Leominſter; and in the river near Chriſtchurch, Hampſhire. It is alſo very common in Lapland: the inhabitants make uſe of the guts of this fiſh inſtead of rennet, to make the cheeſe which they get from the milk of the rein-deer. It is a voracious fiſh, riſes freely to the fly, and will very eagerly take a bait. It is a very ſwift ſwimmer, and diſappears like the tranſient paſſage of a ſhadow, from whence we believe it derived the name of *umbra*.

Effugienſque oculos celeri levis umbra *natatu*. Auſon.
The *umbra* ſwift eſcapes the quickeſt eye.

Thymalus and *thymus* are names beſtowed on it on account of the imaginary ſcent, compared by ſome to that of thyme; but we never could perceive any particular ſmell. It is a fiſh of an elegant form; leſs deep than that of a trout: the largeſt we ever heard of was taken near Ludlow, which was about half a yard long, and weighed four pounds ſix ounces; but this was a very rare inſtance. The irides are ſilvery, tinged with yellow: the teeth very minute, ſeated in the jaws and the roof of the mouth, but none on the tongue: the head is duſky; the covers of the gills of a gloſſy green: the back and ſides of a fine ſilvery grey; but when the fiſh is juſt

Salmon. taken, varied ſlightly with blue and gold; the ſide-line is ſtraight: the ſcales are large, and the lower edges duſky, forming ſtraight rows from head to tail: the tail is much forked.

8. The eperlanus, or ſmelt, inhabits the ſeas of the northern parts of Europe, and probably never is found as far ſouth as the Mediterranean: the Seine is one of the French rivers which receive it; but whether it is found ſouth of that, we have not at preſent authority to ſay. If we can depend on the obſervations of navigators, who generally have too much to think of to attend to the minutiæ of natural hiſtory, theſe fiſh are taken in the Straits of Magellan, and of a moſt ſurpriſing ſize, ſome meaſuring 20 inches in length and 8 in circumference. They inhabit the ſeas that wath theſe iſlands the whole year, and never go very remote from ſhore except when they aſcend the rivers. It is remarked in certain rivers, that they appear a long time before they ſpawn, being taken in great abundance in November, December, and January, in the Thames and Dee, but in others not till February; and in March and April they ſpawn; after which they all return to the ſalt water, and are not ſeen in the rivers till the next ſeaſon. It has been obſerved that they never go into the Merſey as long as there is any ſnow-water in the river. Theſe fiſh vary greatly in ſize; but the largeſt we ever heard of was 13 inches long, and weighed half a pound. They have a very particular ſcent, from whence is derived one of their Engliſh names, *ſmelt*, i. e. ſmell it. That of *ſparling*, which is uſed in Wales and the north of England, is taken from the French *ſperlan*. There is a wonderful diſagreement in the opinion of people in reſpect to the ſcent of this fiſh: ſome aſſert it flavours of the violet; the Germans, for a very different reaſon, diſtinguiſh it by the elegant title of *ſtinkfiſch*.—Smelts are often ſold in the ſtreets of London ſplit and dried. They are called *dried ſparlings*; and are recommended as a reliſh to a glaſs of wine in the morning. It is a fiſh of a very beautiful form and colour; the head is tranſparent, and the ſkin in general ſo thin, that with a good microſcope the blood may be obſerved to circulate. The irides are ſilvery; the pupil of a full black; the under jaw is the longeſt: in the front of the upper jaw are four large teeth; thoſe in the ſides of both are ſmall; in the roof of the mouth are two rows of teeth; on the tongue two others of large teeth. The ſcales are ſmall, and readily drop off: the tail conſiſts of 19 rays, and is forked. The colour of the back is whitiſh, with a caſt of green, beneath which it is varied with blue, and then ſucceeds a beautiful gloſs of a ſilvery hue.

9. The lavaretus, or gwiniad, is an inhabitant of ſeveral of the lakes of the Alpine parts of Europe. It is found in thoſe of Switzerland, Savoy, and Italy; of Norway, Sweden, Lapland, and Scotland; in thoſe of Ireland, and of Cumberland; and in Wales, in that of Llyntegid, near Bala, in Merionethſhire. It is the ſame with the ferra of the lake of Geneva; the ſchelly of Hulſe-water; the pollen of Lough Neagh; and the vangis and juvengis of Loch Mabon. In Scotland, there is a tradition that it was firſt introduced there by their beauteous but unfortunate queen, Mary Stuart; and as in her time the Scotch court was much Frenchified, it ſeems likely that the name was derived from the French *maideſ*, a "dace;" to which a ſlight obſerver might be tempted to compare it from the whiteneſs of its ſcales. The Britiſh name *gwiniad*, or *whiting*, was beſtowed upon it for the ſame reaſon. It is a gregarious fiſh, and approaches the ſhores in vaſt ſhoals in ſpring and in ſummer; which proves in many places a bleſſed relief to the poor of inland countries, in the ſame degree as the annual return of the herring is to thoſe who inhabit the coaſts. Between 7000 and 8000 have been taken at one draught. The gwiniad is a fiſh of an inſipid taſte, and muſt be eaten ſoon, for it will not keep long; thoſe that chooſe to preſerve them do it with ſalt. They die very ſoon after they are taken. Their ſpawning ſeaſon in Llyntegid is in December. The largeſt gwiniad we ever heard of weighed between three and four pounds: the head is ſmall, ſmooth, and of a duſky hue: the eyes very large; the pupil of a deep blue: the noſe blunt at the end; the jaws of equal length: the mouth ſmall and toothleſs: the branchioſtegous rays nine: the covers of the gills ſilvery, powdered with black. The back is a little arched, and ſlightly carinated: the colour, as far as the lateral line, is gloſſed with deep blue and purple; but towards the lines aſſumes a ſilvery caſt, tinged with gold; beneath which thoſe colours entirely prevail. The tail is very much forked: the ſcales are large, and adhere cloſely to the body.

Salmon || Salona.

SALMON, in ichthyology. See SALMO, n° 1.

SALMON-Fiſhery. See *Salmon-FISHERY*.

SALON, or SALOON, in architecture, a lofty, ſpacious ſort of hall, vaulted at top, and uſually comprehending two ſtories, with two ranges of windows.

The ſalon is a grand room in the middle of a building, or at the head of a gallery, &c. Its faces, or ſides, are all to have a ſymmetry with each other; and as it uſually takes up the height of two ſtories, its ceiling, Daviler obſerves, ſhould be with a moderate ſweep.

The ſalon is a ſtate-room much uſed in the palaces in Italy; and from thence the mode came to us. Ambaſſadors, and other great viſitors, are uſually received in the ſalon.

It is ſometimes built ſquare, ſometimes round or oval, ſometimes octagonal, as at Marly, and ſometimes in other forms.

SALONA, a ſea-port town of Dalmatia, ſeated on a bay of the gulph of Venice. It was formerly a very conſiderable place, and its ruins ſhow that it was 10 miles in circumference. It is 18 miles north of Spalatto, and ſubject to Venice. It is now a wretched village, preſerving few diſtinguiſhable remains of its ancient ſplendor. Doubtleſs the two laſt ages have deſtroyed all that had eſcaped the barbarity of the northern nations that demoliſhed it. In a valuable MS. relation of Dalmatia, written by the ſenator Giambattiſta Guiſtiniani, about the middle of the 16th century, there is a hint of what exiſted at that time. "The nobility, grandeur, and magnificence of the city of Salona, may be imagined from the vaults and arches of the wonderful theatre, which are ſeen at this day; from the vaſt ſtones of the fineſt marble, which lies ſcattered on, and buried in the fields; from the beautiful column of three pieces of marble, which is ſtill ſtanding in the place where they ſay the arſenal was, towards the ſea-ſhore; and from the many arches of ſurpriſing beauty, ſup-

Fortis's Travels into Dalmatia.

Salonichi ‖ Salſette.

ſupported by very high marble columns; the height of the arches is a ſtone-throw, and above them there was an aqueduct, which reached from Salona to Spalatro. There are to be ſeen many ruins and veſtiges of large palaces, and many ancient epitaphs may be read on fine marble ſtones; but the earth, which is increaſed, has buried the moſt ancient ſtones, and the moſt valuable things." E. Long. 17. 29. N. Lat. 44. 10.

SALONICHI, formerly called *Theſſalonica*, a ſea-port town of Turkey in Europe, and capital of Macedonia, with an archbiſhop's ſee. It is ancient, large, populous, and rich, being about 10 miles in circumference. It is a place of great trade, carried on principally by the Greek Chriſtians and Jews, the former of which have 30 churches, and the latter as many ſynagogues; the Turks alſo have a few moſques. It is ſurrounded with walls, flanked with towers, and defended on the land-ſide by a citadel, and near the harbour with three forts. It was taken from the Venetians by the Turks in 1431. The principal merchandize is ſilk. It is ſeated at the bottom of a gulph of the ſame name, partly on the top, and partly on the ſide of a hill, near the river Vardar. E. Long. 23. 13. N. Lat. 40. 41.

SALSES, a very ſtrong caſtle of France, in Rouſſillon, on the confines of Languedoc. It was taken from the Spaniards by the French in 1642; and is ſeated on a lake of the ſame name, among mountains, 10 miles north of Perignan. E. Long. 3. 0. N. Lat. 43. 35.

SALSETTE, an iſland of the Eaſt Indies, adjacent to Bombay, from which it is in one place divided only by a narrow paſs fordable at low water. It is about 26 miles long, and eight or nine broad. The ſoil is rich, and by proper cultivation capable of producing any thing that will grow in tropical climates. It is every where well watered, and when in the poſſeſſion of the Portugueſe furniſhed ſuch quantities of rice, that it was called the *Granary of Goa*. It abounds alſo in all kinds of proviſions, and has great plenty of game, both of the four-footed and feathered kind. It has pretty high mountains; and there is a tradition that the whole was thrown up from the bottom of the ſea: in confirmation of which it is ſaid, that on the top of the higheſt hill there was found, ſome years ago, a ſtone anchor, ſuch as was anciently uſed by the inhabitants of that country. Here we meet with the ruins of a place called *Canara*, where there are excavations of rocks, ſuppoſed to be contemporary with thoſe of Elephanta. They are much more numerous, but not comparable to the former either in bigneſs or workmanſhip.

The iſland of Salſette lately formed part of the Portugueſe dominions in India. It ought to have been ceded to the Engliſh along with Bombay, as part of the dower of Catharine of Liſbon, eſpouſed to Charles II. The fulfilment of this article, however, being evaded, the iſland remained in poſſeſſion of the Portugueſe; and notwithſtanding the little care they took of it, the revenue of it was valued at 60,000 l. Such was the negligence of the Portuguſe government, that they took no care to fortify it againſt the attacks of the Marattas, from whoſe dominions Salſette was only ſeparated by a very narrow paſs fordable at low water. Here they had only a miſerable redoubt of no conſeqnence, till, on the appearance of an approaching war with the Marattas, they began to build another, which indeed would have anſwered the purpoſe of protecting the iſland, provided the Marattas had allowed them to finiſh it. This, however, was not their intention. They allowed them indeed to go quietly on with their works, till they ſaw them almoſt completed, when they came and took poſſeſſion of them. The Marattas thus became dangerous neighbours to the Engliſh at Bombay, until it was ceded to the latter by the treaty concluded with theſe people in 1780. E. Long. 72. 15. N. Lat. 19. 0.

Salſola.

SALSOLA, Glass-wort: A genus of the digynia order, belonging to the pentandria claſs of plants; and in the natural method ranking under the 12th order, *Holoraceæ*. The calyx is pentaphyllous; there is no corolla; the capſule is monoſpermous, with a ſcrewed ſeed.

The ſpecies are, 1. The kali, which grows naturally in the ſalt marſhes in divers parts of England. It is an annual plant, which riſes above five or ſix inches high, ſending out many ſide branches, which ſpread on every ſide, garniſhed with ſhort awl-ſhaped leaves; which are fleſhy, and terminate in acute ſpines. The flowers are produced from the ſide of the branches, to which they ſit cloſe, and are encompaſſed by ſhort prickly leaves; they are ſmall, and of an herbaceous colour. The ſeeds are wrapped up in the empalement of the flower, and ripen in autumn; ſoon after which the plant decays. 2. The tragus grows naturally on the ſandy ſhores of the ſouth of France, Spain, and Italy. This is alſo an annual plant, which ſends out many diffuſed ſtalks, garniſhed with linear leaves an inch long, ending with ſharp ſpines. The flowers come out from the ſide of the ſtalks in the ſame manner as thoſe of the former; their empalements are blunt, and not ſo cloſely encompaſſed with leaves as thoſe of the other. 3. The ſoda, riſes with herbaceous ſtalks near three feet high, ſpreading wide. The leaves on the principal ſtalk, and thoſe on the lower part of the branches, are long, ſlender, and have no ſpines; thoſe on the upper part of the ſtalk and branches are ſlender, ſhort, and crooked. At the baſe of the leaves are produced the flowers, which are ſmall, and hardly perceptible; the empalement of the flower afterwards encompaſſes the capſule, which contains one cochleated ſeed. 4. The vermiculata grows naturally in Spain. This hath ſhrubby perennial ſtalks, which riſe three or four feet high, ſending out many ſide-branches, garniſhed with fleſhy, oval, acute-pointed leaves, coming out in cluſters from the ſide of the branches; they are hoary, and have ſtiff prickles. The flowers are produced from between the leaves toward the ends of the branches; they are ſo ſmall as ſcarce to be diſcerned, unleſs they are cloſely viewed. The ſeeds are like thoſe of the other kinds. 5. The roſacea grows naturally in Tartary. This is an annual plant, whoſe ſtalks are herbaceous, and ſeldom riſe more than five or ſix inches high. The leaves are awl-ſhaped, ending in acute points; the empalements of the flowers ſpread open: the flowers are ſmall, and of a roſe colour, but ſoon fade: the ſeeds are like thoſe of the other ſorts.

All the ſorts of glaſs-wort are ſometimes promiſcuouſly uſed for making the ſal kali, but it is the third ſort which is eſteemed beſt for this purpoſe. The manner of making it is as follows: Having dug a trench near

Salt. near the ſea, they place laths acroſs it, on which they lay the herb in heaps, and, having made a fire below, the liquor, which runs out of the herbs, drops to the bottom, which at length thickening, becomes ſal kali, which is partly of a black, and partly of an aſh-colour, very ſharp and corroſive, and of a ſaltiſh taſte. This, when thoroughly hardened, becomes like a ſtone; and in that ſtate is tranſported to different countries for making of glaſs.

SALT, one of the great diviſions of natural bodies, but which has never yet been accurately defined. The characteriſtic marks of ſalt have uſually been reckoned its power of affecting the organs of taſte, and being ſoluble in water. But this will not diſtinguiſh ſalt from quicklime, which alſo affects the ſenſe of taſte, and diſſolves in water; yet quicklime has been univerſally reckoned an earth, and not a ſalt. The only diſtinguiſhing property of ſalts, therefore, is their cryſtallization in water: however, this does not belong to all ſalts; for the nitrous and marine acids, though allowed on all hands to be ſalts, are yet incapable of cryſtallization, at leaſt by any method hitherto known. Several of the imperfect neutral ſalts alſo, ſuch as combinations of the nitrous, muriatic, and vegetable acids, with ſome kinds of earths, cryſtallize with very great difficulty. However, by the addition of ſpirit of wine, or ſome other ſubſtances which abſorb part of the water, keeping the liquor in a warm place, &c. all of them may be reduced to cryſtals of one kind or other. Salt, therefore, may be defined a ſubſtance affecting the organs of taſte, ſoluble in water, and capable of cryſtallization, either by itſelf or in conjunction with ſome other body; and, univerſally, every ſalt capable of being reduced into a ſolid form, is alſo capable of cryſtallization *per ſe*. Thus the claſs of ſaline bodies will be ſufficiently diſtinguiſhed from all others: for quicklime, though ſoluble in water, cannot be cryſtallized without addition either of fixed air or ſome other acid; yet it is moſt commonly found in a ſolid ſtate. The precious ſtones, baſaltes, &c. though ſuppoſed to be formed by cryſtallization, are nevertheleſs diſtinguiſhed from ſalts by their inſipidity and inſolubility in water.

But acids and alkalis, and combinations of both, when in a concrete form, are ſalts, and of the pureſt ſort. Hence we conclude, that the bodies, to which the name of *ſalts* more properly belongs, are the concretions of thoſe ſubſtances; which are accordingly called *acid ſalts*, *alkaline ſalts*, and *neutral ſalts*. Theſe laſt are combinations of acid and alkaline ſalts, in ſuch proportion as to render the compounds neither ſour nor alkaline to the taſte. This proportionate combination is called *ſaturation*: thus the common kitchen-ſalt is a neutral ſalt, compoſed of marine acid and mineral alkali combined together to the point of ſaturation. The appellation of *neutral ſalts* is alſo extended to denote all thoſe combinations of acids, and any other ſubſtance with which they can unite, ſo as to loſe, wholly or in great meaſure, their acid properties.

But although this general definition of ſalts is commonly received, yet there are many writers, eſpecially mineralogiſts, who confine the denomination of *ſalts* in the manner we firſt mentioned, viz. to thoſe ſubſtances only which, beſides the general properties of ſalts, have the power of cryſtallizing, that is, of arranging their particles ſo as to form regularly-ſhaped bodies, called *cryſtals*, when the water ſuperfluous to their concrete exiſtence has been evaporated.

The ancient chemiſts aſſerted that ſalt was one of the component principles of metals, and indeed of every thing elſe: a doctrine which was attempted to be revived by the late Dr Price of Guildford, who thought it probable that the baſis of all imperfect metals is ſaline, becauſe Mr Scheele had lately extracted a real acid from arſenic, which, by the addition of a proper quantity of phlogiſton, becomes a ſemimetal. But here the argument will hold only with regard to the ſemimetals, all of which are volatile in the fire, and therefore may poſſibly have a volatile baſis, ſuch as all acids are in ſome degree: but ſome of the imperfect metals, as tin and copper, may be reduced to a calx equally refractory with quicklime itſelf; and even zinc, though volatile in cloſe veſſels, is yet capable of being reduced to an exceedingly refractory calx called *flowers of zinc*; and it is to be obſerved, that the regulus of arſenic, even in its moſt perfect metalline form, cannot be calcined like other metals. The common opinion that metals have an earthy, rather than a ſaline baſis, ſeems to be well founded. Salt.

The origin of ſalts is very much, or rather totally, unknown. Some eminent chemiſts, particularly Stahl, have ſuppoſed that the number of ſubſtances truly and eſſentially ſaline is very ſmall; nay, that there is but one ſaline principle in nature. This principle they ſuppoſe to be the vitriolic acid, as being the moſt ſimple and indeſtructible of them all. Stahl delivers his opinion on this ſubject in the following words: "That he conſiders the vitriolic acid as the only ſubſtance eſſentially ſaline; as the only ſaline principle which, by uniting more or leſs intimately with other ſubſtances that are not ſaline, is capable of forming an innumerable multitude of other ſaline matter, which nature and art ſhew us; and, ſecondly, that this ſaline principle is a ſecondary principle, compoſed only by the intimate union of two primary principles, water and earth.

In ſupport of this theory Mr Macquer argues in the following manner: "Every true chemiſt will eaſily diſcover that this grand idea is capable of comprehending by its generality, and of connecting together, all the phenomena exhibited by ſaline ſubſtances. But we muſt at the ſame time acknowledge, that when we examine the proofs upon which it is founded, although it has a great appearance of truth by its conſiſtency with the principles of chemiſtry, and with many phenomena, yet it is not ſupported by a ſufficient number of facts and experiments to aſcertain its truth. We might here examine what degree of probability ought to be granted to this theory of ſalts; but this could not be properly accompliſhed, without entering into long details, and penetrating into the depths of chemiſtry. We are therefore obliged to relate only what is moſt eſſential to be known concerning this grand hypotheſis. We may perceive at once, that the former of thoſe propoſitions, upon which is founded the theory which we mentioned, cannot be demonſtrated, unleſs it be previouſly proved that every ſaline matter, excepting pure vitriolic acid, is nothing but this ſame acid differently modified, the primary properties of which are more or leſs altered or diſguiſed by the union contracted with other ſubſtances. But we confeſs, that chemiſts are not capable of proving deciſively this opinion; which, however, will appear very probable from the following reflections.

"Firſt, of all ſaline matters known, none is ſo ſtrong,

Salt. so unalterable, so eminently poſſeſſed of ſaline properties, as vitriolic acid."

The vitriolic acid, when combined with other ſubſtances, forms vitriolic ſalts, which vary both in ſpecific names and properties according to the various ſubſtances with which the acid is combined. Thus the vitriolic acid, combined with mineral alkali, forms the ſalt called *Glauber's ſalt*, or *ſal mirabile*. When it is combined with calcareous earths, it forms vitriolic ſalts with baſes of calcareous earth, which are commonly called *ſelenites*. When combined with argillaceous earths, it forms alum. When combined with metals, it forms vitriolic ſalts with metallic baſes, to which the general name *vitriols* is given; and in commerce are commonly called *copperas*. The vitriols principally uſed are, 1. The martial vitriol; called alſo *Engliſh vitriol*, *green vitriol*, or *green copperas*, which is a combination of vitriolic acid with iron. 2. The vitriol of copper, called alſo *blue vitriol*, *Cyprian vitriol*, or *blue copperas*; which is a combination of vitriolic acid and copper. 3. The vitriol of zinc, called alſo *white copperas*, and *Goſlar vitriol*, which is a combination of the ſame acid with a ſemimetal called *zinc*. It is a property peculiar to the vitriolic acid, that all the combinations of it, with thoſe ſubſtances with which it can form neutral ſalts, are ſuſceptible of chryſtallization.

"Secondly, Amongſt the other ſaline ſubſtances, thoſe which appear moſt active and moſt ſimple, as nitrous and marine acids, are at the ſame time thoſe whoſe properties moſt reſemble the properties of vitriolic acid."

The nitrous acid, combined with all the ſubſtances with which it can mix, forms ſaline ſubſtances, in general called *nitrous ſalts*; ſpecifying each particular ſalt by the name of the ſubſtance united to the acid. Thus nitrous acid, with fixed vegetable alkali, forms a ſaline ſubſtance called *nitre*, or *ſalt petre*. With mineral alkali, forms cubic or quadrangular nitre. When mixed with metallic ſubſtances, forms metallic nitres, which are ſpecified *nitre of gold*; *nitre of ſilver*, or *lunar nitre*, *lunar cryſtals*, and *cryſtals of ſilver*, *nitrous cryſtals of mercury*; *nitre of copper*, &c.

"Thirdly, We may give to vitriolic acid many of the characteriſtic properties of nitrous acid, by combining it in a certain manner with the inflammable principle, as we ſee in the volatile ſulphureous acid; and even, according to an experiment of Mr Piech, related in a memoir concerning the origin of nitre, which gained the prize of the academy of Berlin, vitriolic acid, mixed with vegetable and animal matters ſuſceptible of fermentation, is really transformed into a nitrous acid by the putrefaction of theſe matters. See Chemistry, n° 720.

"Fourthly, The marine acid, although its principles are leſs known than thoſe of the nitrous acid, may be approximated to the character of vitriolic and nitrous acids by certain methods. This acid, after it has been treated with tin and other metallic matters, is capable of forming ether with ſpirit of wine, as vitriolic acid does, which it cannot do in its natural ſtate; and when iron is diſſolved in it, it ſeems to be approximated to the nature of nitrous acid. Reciprocally the approximation of vitriolic acid to the character of marine acid ſeems not impoſſible. Having once diſtilled very pure vitriolic acid upon a conſiderable quantity of white arſenic, I was ſtruck with a ſtrong ſmell like that of marine acid, which was not either that of arſenic or of vitriolic acid; for this has no ſmell when it is pure." Salt.

The marine acid, combined with various matters, forms marine ſalts, or ſimply ſalts, ſpecified by the names of their particular baſes. The ſea-ſalt or kitchen ſalt, and ſal gem, are combinations of marine acid and mineral alkali. When this acid is combined with volatile alkali, it forms ſal ammoniac (A.) With metals it forms metallic ſalts, called *ſalt of gold*, *ſalt of copper*, &c. according to the various metals combined with the acid. The ſalt of ſilver is alſo called *luna cornea*; the ſalt of lead is often called *plumbum corneum*; and the ſalts of antimony, and of arſenic, are known by the names of *butter of antimony*, and *butter of arſenic*.

"Fifthly, Oily vegetable acids become ſo much ſtronger, and more ſimilar to vitriolic acid, as they are more perfectly deprived of their oily principle, by combining them with alkalis, earths, or metals; and afterwards by ſeparating them from theſe ſubſtances by diſtillation, and eſpecially by frequently repeating theſe operations. They might perhaps be reduced to a pure vitriolic acid, by continuing ſufficiently this method: and reciprocally, vitriolic and nitrous acids, weakened by water, and treated with much oily matters, or ſtill better with ſpirit of wine, acquire the characters of vegetable acids. We may ſee a remarkable inſtance of this in Mr Pott's diſſertation *De acido nitri vinoſo*. [The moſt remarkable experiment in which is related under the article Chemistry, n° 781.]

"Sixthly, the properties of fixed alkalis ſeem to be very different from thoſe of acids in general, and conſequently of vitriolic acid. Yet if we conſider that a large quantity of earth enters their compoſition; that much of it may be ſeparated by repeated ſolutions and calcinations; and alſo, that by depriving theſe ſaline ſubſtances of their earthy principles, they become leſs fixed, more deliqueſcent, and, in a word, more ſimilar to vitriolic acid in this reſpect;—we ſhall not think it improbable, that fixed alkalis owe their ſaline properties to a ſaline principle, of the nature of vitriolic acid, but much diſguiſed by the quantity of earth, and probably of inflammable principle, to which it is united in theſe combinations. The properties of volatile alkalis, and the transformation of fixed alkali, or of its materials, into volatile alkali in putrefaction, and in ſeveral diſtillations, ſeem to ſhow ſufficiently that they are matters eſſentially ſaline, as fixed alkalis are, and that their volatility which diſtinguiſhes them proceeds from their containing a leſs quantity of earth, but more attenuated, and a portion of very ſubtile and volatile oil, which enters their compoſition. [For ſome other particulars relating to the tranſmutation of ſalts, ſee Chemistry, n° 784.]

"Beſides theſe principal facts, there are many others, too numerous to be even ſlightly mentioned here; they may be found ſcattered in the works of chemiſts, particularly of Stahl. But perſons who would collect and compare all the experiments relating to this ſubject,

(A) Ammoniacal ſalts is alſo a general name given to all neutral ſalts compoſed of an acid ſaturated with a volatile alkali.

Salt. subject, ought to know, that many of them are not sufficiently ascertained; and that perhaps a greater number of them have not been sufficiently prosecuted, and are, properly speaking, only begun. We must even acknowledge, that many of those experiments which we have mentioned, have not been sufficiently prosecuted. Salt.

"The second fundamental proposition of the theory of salts, namely, 'That the vitriolic acid is compounded of only the aqueous and earthy principles,' is, like the first, supported by many facts which give it a degree of probability, but which do not amount to a complete demonstration. This proposition may be supported by the following considerations.

"First, Experience constantly shews, that the properties of compound bodies are always the result of those of the component parts of these bodies, or rather they are the properties of these component bodies modified by one another.

"Thus, if a body be composed of two principles, one of which is fixed, and the other volatile, it will have a less degree of fixity than the former, and a less volatility than the latter. If it be composed of two principles, one of which is specifically heavier than the other, its specific gravity will be greater than that of one of them and less than that of the other. The same observation is applicable to all the other essential properties, excepting those which destroy each other; as, for instance the tendency to combination, or the dissolving power; for these latter properties are weakened so much more in the compounds as their principles are more strongly united, and in more just proportion.

"We observe, nevertheless, that the properties of compound bodies are not always exactly intermediate betwixt the properties of the component bodies; for, to produce this mean, the quantities of each of the component parts must be equal, which is the case in few or no compounds.

"Besides, some particular circumstances in the manner in which the principles unite with one another, contribute more or less to alter the result of the combined properties: for instance, experience shews, that when several bodies, particularly metals, are united together, the specific gravities of which are well known, the allay formed by such union has not the precise specific gravity which ought to result from the proportion of the allayed substances; but that in some allays it is greater and in others less. But we are certain, on the other side, that these differences are too inconsiderable to prevent our distinguishing the properties of the principles in the compounds which they form, especially when they have very different properties.

"These things being premised, when we examine well the properties of vitriolic acid, we shall easily find that they partake of the properties of the aqueous and of the earthy principles.

"First, When the acid is as pure as we can have it, it is like the purest water and the purest vitrifiable earths, free from colour or smell, and perfectly transparent.

"Secondly, Although we cannot deprive the vitriolic acid of all the water superabundant to its saline essence, and therefore its precise specific gravity has not been determined, we know that when it is well concentrated, it is more than twice as heavy as pure water, and much less heavy than any earthy substance.

"Thirdly, This acid is much less fixed than any pure earth, since, however well it may be concentrated, it may always be entirely distilled; for which purpose a much stronger degree of heat is requisite than for the distillation of pure water.

"Fourthly, We do not know the degree of solidity of vitriolic acid, or the adhesion of aggregation, which its integrant parts have one to another, because for this purpose the vitriolic acid ought to be deprived of all superabundant water: but if we judge of it by the solid consistence of this acid when highly concentrated, as we see from the vitriolic acid called *glacia*, the integrant parts of this acid seem susceptible of a much stronger adhesion than those of pure water; but much less than those of earth, as we see from the instance of hard stones.

"Fifthly, The union which this acid contracts with water and with earths, shows that these substances enter into its composition; for we know, that in general compounds are disposed to unite superabundantly with the principles which compose them. All these properties of vitriolic acid, which so sensibly partake, and much more than any other acid, of the properties of earth and of water, are sufficient to induce us to believe that it is composed of these two principles; but it has one very eminent property, which is common with it to neither water nor pure earth, which is, its violent and corrosive taste. This property is sufficient to raise doubts, if we could not explain it from principles, which seem certain and general, relating to the combination of bodies.

"We observe, then, concerning the property now in question, that is, of taste in general, that it can only be considered as an irritation made upon the organs of taste by sapid bodies; and if we reflect attentively upon it, we shall be convinced, that no substance that is not impressed by some impulse can irritate or agitate our sensible organs, but by a peculiar force of its integrant parts, or by their tendency to combination; that is, by their dissolving power. According to this notion, the taste of bodies, or the impression made upon our sensible organs by their tendency to combination, or by their dissolving power, are the same property; and we see accordingly, that every solvent has a taste, which is so much more strong as its dissolving power is greater; that those whose taste is so violent that it amounts to acrimony, corrosion, and causticity, when applied to any other of the sensible parts of our body besides the organs of taste, excite in them itching and pain.

"This being premised, the question is, How earth, in which we perceive no taste nor dissolving power, and water, which has but a very weak dissolving power, and little or no taste, should form by their combination a substance, such as the vitriolic acid is, powerfully corrosive and solvent?

"To conceive this, let us consider, first, that every part of matter has a power by which it combines, or tends to combine, with other parts of matter. Secondly, that this force, the effects of which are perceptible, in chemical operations, only among the very small molecules, or the integrant and constituent parts of bodies, seems proportionable to the density or specific gravity of these parts. Thirdly, that this same force is limited

Salt. in every integrant molecule of matter: that if we conſider this force as not ſatisfied, and conſequently as a ſimple tendency to combination, it is the greateſt poſſible in an integrant molecule of matter perfectly inſulated, or attached to nothing; and is the ſmalleſt poſſible, or none, when it is ſatisfied by its intimate combination with other parts capable of exhauſting all its action; its tendency being then changed into adheſion. Salt

"Hence we may infer, that the integrant parts of the earthy principle have eſſentially, and like all the other parts of matter, a force of tendency to union, or of coheſion in union, according to their condition; that as this earthy principle has a much more conſiderable denſity or ſpecific gravity than all other ſimple bodies that we know, we may probably preſume that its primary integrant molecules have a more conſiderable force of tendency to union, in the ſame proportion, than the integrant parts of other principles; that conſequently when they cohere together, and form an aggregate, their aggregation muſt alſo be ſtronger and firmer than that of any other body. Accordingly we ſee, that the pureſt earthy ſubſtances, whoſe parts are united and form maſſes, ſuch as, for inſtance, the ſtones called *vitrifiable*, are the hardeſt bodies in nature. We are no leſs certain, that as the tendency of the parts of matter to unite is ſo much leſs evident as it is more exhauſted and ſatisfied in the aggregation, the parts of the earthy principle being capable of exhauſting mutually all their tendency to union, we may thence infer, that every ſenſible maſs of pure earthy matter muſt appear deprived of any diſſolving power; of taſte; in a word, of tendency to union from the firmneſs of its aggregation. But we may alſo infer, that when theſe primary integrant parts of the earthy principle are not united together in aggregation, then, reſuming all the activity and tendency to union which are eſſential to them, they muſt be the ſtrongeſt and moſt powerful of all ſolvents.

"Theſe being premiſed, if we ſuppoſe again, with Stahl and the beſt chemiſts, that, in the combination of the ſaline principle or of vitriolic acid, the parts of the earthy principle are united, not with each other, as in the earthy aggregation, but with the primary parts of the aqueous principle, each to each, we may then eaſily conceive, that the primary integrant parts of the water, having eſſentially much leſs tendency to combination than thoſe of earth, the tendency of theſe latter to union will not be exhauſted, but ſatisfied only partly, by their combination with the former; and that conſequently a compound muſt reſult, the integrant parts of which will have a ſtrong diſſolving power, as vitriolic acid is.

"We may ſee from hence how much miſtaken chemiſts are, who, conſidering earth only in its aggregation, or rather not attending to this ſtate, and not diſtinguiſhing it from that ſtate in which the parts of this ſame earth are ſo ſeparated from each other by the interpoſition of another body, that they cannot touch or cohere together, have conſidered the earthy principle as a ſubſtance without force or action, and have very improperly called that a *paſſive principle*, which of all others is the ſtrongeſt, moſt active, and moſt powerful.

"However this general theory of ſalts may conform with the moſt important phenomena of chemiſtry, we muſt acknowledge, that it can only be propoſed as a ſyſtematical opinion, till it be evidently demonſtrated by the deciſive means employed in chemical demonſtrations, namely, by decompoſition and recompoſition: thus, if we could reduce vitriolic acid to earth and water, and make that acid by combining together theſe two principles, this theory would ceaſe to be a ſyſtem, and would become a demonſtrated truth. But we muſt confeſs, that this theory is leſs ſupported by experiment than by argument, from the many difficulties that are inevitable in ſuch enquiries. For on one ſide, we know that the ſimpler bodies are, the more difficult is their decompoſition; and on the other ſide, the ſtronger the aggregation is, the greater is the difficulty of making it enter into a new combination. Thus, as vitriolic acid is very ſimple, ſince it is a compound of the firſt order, it ought ſtrongly to reſiſt decompoſition; and as the aggregation of pure earth is the firmeſt that we know, it cannot eaſily be made to enter as a principle into a new combination with water to form a ſaline matter. The following are the principal experiments which have been made relative to the ſubject.

"Firſt, we ſeem to be certain, from many proofs, that all ſaline ſubſtances, comprehending thoſe that contain vitriolic acid, as vitriolated tartar, Glauber's ſalt, and other vitriolated ſalts which are ſufficiently fixed to ſupport a perfect drying, or rather calcination, being alternately diſſolved, dried, and calcined a number of times, are more and more diminiſhed in quantity, and that earth and water are ſeparated from them each operation. But alkaline ſalts appear to be ſtill more ſuſceptible than any other ſaline matter of this kind of decompoſition.

"Secondly, When nitre is burnt in cloſe veſſels, ſo that we may retain not only all that remains fixed after this burning, but alſo what exhales in vapours, as in the experiment of the clyſſus of nitre, we have a proof which ſeems deciſive, that the mineral acid of this ſalt, which is not very far from the ſimplicity of vitriolic acid, is totally decompoſed and reduced into earth and water. For if we examine the fixed reſiduum in the retort, we find that it is only the alkali that was contained in the nitre, charged with a ſuperabundant earth, which is ſeparable from it by ſolution and filtration. And if the liquor in the receiver, formed by the vapours condenſed there, be examined, which ought to be nitrous acid; if this acid had not been deſtroyed, we find, that, ſo far from being acid, it is only pure water, ſometimes even charged with a little fixed alkali, which had been raiſed by the force of the detonation. Thus nitrous acid is made to diſappear in this experiment, and in its place we find only earth and water.

"Thirdly, The phenomena of limeſtone, which by calcination and extinction in water acquires ſaline properties that it had not before its attenuation by fire and its combination with water; and alſo the experiment of Beccher, who aſſerts, that if a vitrifiable ſtone be alternately made red-hot, and extinguiſhed in water a number of times, it may be ſo attenuated that it ſhall be like a ſaline gelatinous matter; theſe, I ſay, ſhow that ſaline matters are actually formed by the intimate combination of the very attenuated parts of earth with thoſe of water. We find in the writings of Beccher and Stahl, and particularly in the *Specimen Beccherianum* of the latter author, many other obſervations and experiments tending to prove the ſame propoſition; but we muſt confeſs, that none of the experiments we have mentioned, excepting that of the decompoſition

of

Salt. of nitrous acid by burning, are abſolutely deciſive; principally becauſe they have not been ſufficiently repeated or proſecuted, nor carefully enough examined in all their circumſtances."

On this theory it is obvious to remark, that our author has omitted to mention the moſt active part of the compoſition of ſalts, namely elementary fire. Of this both acids and alkalis undoubtedly contain a great quantity in a very active ſtate, as is evident from their performing the effects of fire when applied to certain ſubſtances; nay, from their actually burſting into flame when mixed with ſome kinds of oils. For an explanation of the reaſon of which, ſee HEAT, and the various detached articles relative to that ſubject. Whatever doubts we may have of the power of mere water combined with mere earth to affect the organs of taſte, we can have none that the element of fire is capable of ſo doing; and from the very taſting of theſe ſubſtances, we may be aſſured, that whatever gives that peculiar ſenſation to the tongue which we call *acid* or *alkaline*, gives alſo the other properties of the ſalt, whatever they may be. In alkalis, no doubt the greateſt part of the compoſition is earth; but from what has been ſaid on QUICKLIME, it appears, that mere earth, by the artificial action of fire alone, acquires all the properties of ſalt, that of cryſtallizing *per ſe* excepted: it ſeems probable therefore, that, in the more perfect operations of nature, the ſame materials are uſed; only the proportions are ſuch, that the ſubſtance is more ſoluble, and its cauſticity greater, than even quicklime itſelf. With regard to acids, the earthy parts ſeem to be fewer; and in all probability the moſt conſiderable ingredient in their compoſition is water: but in what manner this element is united to that of fire ſo as to produce the peculiar phenomena of acids, cannot be explained.

The acid of tartar (the pureſt part of which, or that ſaline ſubſtance which firſt cryſtallizes by evaporation in the veſſels in which it is purified, is called *cream of tartar*), and alſo all other concrete vegetable acids analogous to it, when mixed with various other ſubſtances, form compounds, generally called *tartareous ſalts*, or *ſoluble tartars*, becauſe they are diſſolved by water more eaſily than the acid of tartar itſelf. Acetous ſalts, that is, all ſalts containing the acid of vinegar, are alſo combined with various baſes, and form ſaline ſubſtances of different names; the principal of which are, the acetous ſalt of copper, called *cryſtals of Venus, or of verdigris* by the chemiſts, and *diſtilled* or *cryſtallized verdigris* in commerce; the acetous ſalt of lead, commonly called *ſalt* or *ſugar of lead*; and the acetous mercurial ſalts. Sugar is an eſſential vegetable ſalt, of a pleaſant ſweet taſte, containing a vegetable acid combined with earth and oil.

Potaſh is a fixed vegetable alkali, extracted from the aſhes of wood. Concrete volatile alkalis are generally called *volatile ſalts*; although this name is ſometimes alſo given to the volatile ſalt of amber, which is not an alkaline but an acid ſalt. Borax is a neutral ſaline matter, whoſe origin, whether animal or vegetable, is as yet unknown, its components being not ſufficiently examined. It is ſoluble in water, and very nearly as cryſtallizable as alum. When borax is expoſed to the fire, it firſt bubbles and foams very much, but afterwards it melts into a clear glaſs. When acids are combined with the alkaline part of borax, a ſubſtance of a ſingular nature is ſeparated from it, commonly called *ſedative ſalt*. Salt. Although this ſubſtance acts as an acid in borax, by ſaturating its alkali, yet it has no acid taſte, nor doth it turn the tincture of heliotropium to a red, as other acids do. It is the property of borax to facilitate conſiderably the fuſion of metals, of earths, and other minerals. Some ſpecies of ſtones and earths cannot be vitrified at all, except they are mixed with borax. For this property borax is commonly uſed as a flux (that is, a ſubſtance which facilitates the fuſion of other bodies) in various manufactories; but eſpecially in ſoldering metals, and in aſſaying ores. Phoſphoric ſalts are combinations of alkaline, earthy, and metallic ſubſtances with the acid obtained from the phoſphorus of urine. Beſides the abovementioned ſalts, there are ſeveral others to be met with in the writings of the chemical and medical authors; but, as they are of little conſequence, we ſhall omit any account of them.

Some new neutral ſalts have been formed by the dephlogiſticated marine, or, according to the new theory, the oxygenated muriatic acid.—This was firſt taken notice of by M. Berthollet, and the diſcovery is thus illuſtrated by Dr Dollfuſs, in Crell's Annals for the year 1788, vol. i. p. 319.

"In the month of November 1786 (ſays he), whilſt I was preparing to tranſlate Higgins's experiments reſpecting the acetous acid, I found the following amongſt the numerous obſervations which that work contains, p. 180. 'The acid elaſtic fluid which iſſues, when two pounds of manganeſe are mixed and diſtilled with two or three of ordinary ſpirit of ſea-ſalt, may all, except a ſmall portion of phlogiſtic air, be condenſed in a ſolution of fixed vegetable alkali; and the ſolution thus impregnated yields a conſiderable quantity of nitre, which cryſtallizes in the ordinary form, and detonates on red-hot coals. The ſolution at the ſame time yields regenerated ſea-ſalt." The part of this propoſition which relates to the form of the cryſtals and to their detonation is ſufficiently plain; but that I might have a ſtill more complete conviction on the ſubject, I repeated the experiment upon a ſmall ſcale.

"For this purpoſe I put into a vial an ounce of pulveriſed oxyd *(calx)* of manganeſe with an ounce and a half of muriatic acid, and by means of a bent tube I directed the vapour into another vial, which contained a ſolution of vegetable alkali. I then diſtilled by the gentle heat of a ſmall lamp. From the vial containing the alkali went a ſecond tube, for the purpoſe of carrying off the air which I hoped to obtain by this proceſs.

"As ſoon as the oxygenated muriatic acid appeared, ſome air eſcaped through the tube, which ſhowed all the properties of common atmoſpheric air; and as ſoon as all the air which the vials contained previous to the diſtillation had been expelled, no more ſuch air appeared. The vapours of the oxygenated muriatic acid were abſorbed by the ſolution of vegetable alkali, without the extrication of the ſmalleſt portion of carbonic acid (fixed air) from the alkali. As faſt as the alkali, which adhered to the ſides of the glaſs, abſorbed the acid vapour, priſmatic cryſtals appeared; and many more, which I obtained a few hours afterwards, were formed in the liquor. Although theſe cryſtals detonated in the fire, they had a taſte very different from that of nitre. It was extremely pungent, and was rendered ſtill more

Salt. more intolerable by the ſuffocating odour of the nitro-muriatic acid *(aqua regia)*. In order to complete the cryſtallization, I evaporated in the ſame vial the remaining liquor. As ſoon as the vapour appeared, a quantity of carbonic acid was diſengaged, and afterwards ſome atmoſpheric air. The ſalt which I obtained by cryſtallization after the evaporation was a true muriat of potaſh, which did not detonate in the fire. Probably Mr Higgins performed the operation in the way I have deſcribed; but he was too haſty in concluding this ſalt to be nitre merely becauſe it detonated. I gave an account of this experiment to Mr Kirwan at the time, and ſoon after communicated it to Profeſſor Gadolin, who offered to aſſiſt me in repeating the experiment.

"We agreed to employ cryſtallized carbonat of ſoda (mild mineral alkali); and the following was the reſult of our experiment. We diſſolved ſome of this carbonat in a large quantity of water, and we employed two or three hours a day, for ſeveral ſucceſſive days, in introducing into the ſolution as much oxygenated muriatic gas as was ſufficient entirely to ſaturate it; we then poured the ſaline liquor into a glaſs baſon, and left it covered over to evaporate ſpontaneouſly. After ſome time a number of priſmatic cryſtals were formed, which detonated in the fire like nitre. They occaſioned a brown precipitate from a ſolution of iron in ſulphuric or vitriolic acid; and mixed with ſal ammoniac, they gave out a ſtrong ammoniacal odour, accompanied with ſome effervescence, which was to be attributed to the extrication of fixed air during the mixture. The remaining part of the liquor evaporated again, produced freſh cryſtals, which, though they certainly had a faint ſmell of oxygenated muriatic acid, in reality conſiſted partly of muriat of ſoda (common ſalt), and partly of uncombined ſoda; for they did not detonate, and they precipitated iron of a light green colour. The liquor which appeared above theſe cryſtals, however, had not yet entirely loſt the ſmell of the oxygenated muriatic acid. Since this, M. Gadolin has made the following experiment, which he communicated to me. He put two drams of magneſia, ſaturated with carbonic acid, into an ounce and a half of water, into which he introduced during ſeveral hours a quantity of oxygenated muriatic gas. The water evidently acquired the odour of the oxygenated muriatic acid. He filtered the liquor, and waſhed and dried that part of the magneſia which had not been diſſolved, and which weighed one dram 4-5ths, ſo that the water was found to have diſſolved 1-5th of a dram. As ſoon as the liquor began to boil, a ſtrong effervescence was occaſioned, ſome oxygenated muriatic gas was diſengaged, and a ſmall quantity of carbonat of magneſia was precipitated. When the liquor had become cool, it was filtered, that it might be ſeparated from the precipitated powder. It had ſtill the ſame odour; and on being again heated, an effervescence ſimilar to the firſt took place, and a freſh quantity of carbonat of magneſia was ſeparated. This phenomenon appeared every time M. Gadolin boiled the liquor after its cooling, till at laſt he had evaporated it to dryneſs, when there ſtill remained a ſmall quantity of magneſia. Hence M. Gadolin concludes, that water, oxygenated muriatic acid, and carbonat of magneſia, form a combination which heat does not decompoſe till the vapour of the water carries off the oxygenated muriatic acid, at which time the carbonat of magneſia is precipitated. In conſequence of what we have now related, Salt. we ought to reckon, in addition to the two ſalts diſcovered by M. Berthollet, another ſalt, to which, according to the new French nomenclature, might be given the name *murias oxygenatus magneſiæ liquidus*, becauſe we cannot obtain it in a concrete form. The oxygenated muriatic acid appears to enter into a very different, or at leaſt into a much more intimate, combination with the metals; a ſubject which greatly merits the attention of the chemiſt.

The probability of this propoſition is ſtrengthened by the theory of M. Berthollet; according to which the mercury in corroſive muriat of mercury (corroſive ſublimate) is combined with the oxygenated muriatic acid, ſo as not to be ſeparated from it without great difficulty.

Common SALT, or *Sea-Salt*, the name of that ſalt extracted from the waters of the ocean, which is uſed in great quantities for preſerving proviſions, &c.

It is a perfect neutral ſalt, compoſed of marine or muriatic acid, ſaturated with mineral alkali. It has a ſaline but agreeable flavour. It requires about four times its weight of cold water to be diſſolved, and nearly the ſame quantity of boiling water, according to Macquer. But according to Kirwan, it only requires 2,5 its weight of water to be diſſolved in the temperature of ſixty degrees of Farenheit. This ſalt always contains ſome part formed with a calcareous baſe; and, in order to have it pure, it muſt be diſſolved in diſtilled water; then a ſolution of mineral alkali is to be poured in it until no white precipitation appears; then by filtrating and evaporating the ſolution, a pure common ſalt is produced. Its figure is perfectly cubic, and thoſe hollow pyramids, or *tremies* as the French call them, as well as the parallelopipeds formed ſometimes in its cryſtallization, conſiſt all of a quantity of ſmall cubes diſpoſed in thoſe forms. Its decrepitation on the fire, which has been reckoned by ſome as a characteriſtic of this ſalt, although the vitriolated tartar, nitrous lead, and other ſalts, have the ſame property, is owing chiefly to the water, and perhaps alſo to the air of its cryſtallization.

Its ſpecific gravity is 2,120 according to Kirwan. The acid of tartar precipitates nothing from it. One hundred parts of common ſalt contain thirty-three of real acid, fifty of mineral alkali, and ſeventeen of water. It is commonly found in ſalt water and ſalt ſprings, in the proportion of even thirty-ſix *per cent.* It is found alſo in coals, and in beds of gypſum. This ſalt is unalterable by fire, though it fuſes, and becomes more opaque: nevertheleſs a violent fire, with the free acceſs of air, cauſes it to evaporate in white flowers, which ſtick to the neighbouring bodies. It is only decompoſed, as Macquer affirms, by the vitriolic and nitrous acid; and alſo by the boracic or ſedative ſalt. But although nitre is decompoſed very eaſily by arſenic, this neutral marine ſalt is nowiſe decompoſed by the ſame. According to Mongez, the fixed vegetable alkali, when cauſtic, decompoſes alſo this marine ſalt. It preſerves from corruption almoſt all ſorts of animal food much better for uſe than any other ſalt, as it preſerves them without deſtroying their taſte and qualities; but when applied in too ſmall a quantity, it then forwards their corruption.

Of this moſt uſeful commodity there are ample ſtores on land as well as in the ocean. There are few countries which

Salt. which do not afford vaſt quantities of rock or foſſil ſalt. Mines (A) of it have long been diſcovered and wrought in England, Spain, Italy, Germany, Hungary, Poland, and other countries of Europe. In ſeveral parts of the world there are huge mountains which wholly conſiſt of foſſil ſalt. Of this kind are two mountains in Ruſſia, nigh Aſtracan; ſeveral in the kingdoms of Tunis and Algiers, in Africa; and ſeveral alſo in Aſia; and the whole iſland of Ormus in the Perſian gulf almoſt entirely conſiſts of foſſil ſalt. The new world is likewiſe ſtored with treaſures of this uſeful mineral, as well as with all other kinds of ſubterraneam productions. Moreover, the ſea affords ſuch vaſt plenty of common ſalt, that all mankind might thence be ſupplied with quantities ſufficient for their occaſions. There are alſo innumerable ſprings, ponds, lakes, and rivers, impregnated with common ſalt, from which the inhabitants of many countries are plentifully ſupplied therewith. In ſome countries which are remote from the ſea, and have little commerce, and which are not bleſſed with mines of ſalt or ſalt-waters, the neceſſities of the inhabitants have forced them to invent a method of extracting their common ſalt from the aſhes of vegetables. The muriatic ſalt of vegetables was deſcribed by Dr Grew under the title of *lixiviated marine ſalt*. Leeuwenhoek obtained cubical cryſtals of this ſalt from a lixivium of ſoda or kelp, and alſo from a ſolution of the lixivial ſalt of carduus benedictus; of which he hath given figures in a letter to the Royal Society, publiſhed in N° 173. of their Tranſactions. Dr Dagner, in *Act. Acad. N. C.* vol. v. obſ. 150. takes notice of great quantities of it which he found mixed in pot-aſhes. And the ingenious Dr Fothergill extracted plenty of it from the aſhes of fern: See *Medical Eſſays*, vol v. article 13.

The muriatic ſalt which the excellent Mr Boyle extracted from ſandiver, and ſuppoſed to be produced from the materials uſed in making glaſs, was doubtleſs ſeparated from the kelp made uſe of in that proceſs. Kunckel alſo informs us, that he took an alkaline ſalt; and after calcining it with a moderate fire, diſſolved it in pure water, and placing the ſolution in a cool cellar, obtained from it many cryſtals of a neutral ſalt. He ſuppoſes, that the alkaline ſalt was by the proceſs converted into this neutral ſalt. But it is more reaſonable to believe, that the alkaline ſalt which he applied was not pure, but mixed with the muriatic ſalt of vegetables, which by this proceſs was only ſeparated from it.

It is doubtleſs chiefly this muriatic ſalt which, in ſome of the inland parts of Aſia, they extract from the aſhes of duck-weed and of Adam's fig-tree, and uſe for their common ſalt.

That they are able in thoſe countries to make common ſalt to profit from vegetables, ought not to be wondered at, ſince in Dehli and Agra, capitals of Indoſtan, ſalt is ſo ſcarce as uſually to be ſold for half-a-crown a pound. We may therefore give ſome credit to Marco-Polo, when he informs us, that in the inner parts of the ſame quarter of the world, in the province of Caindu, lying weſt of Tebeth, the natives uſed ſalt inſtead of money, it being firſt made up in cakes, and ſealed with the ſtamp of their prince; and that they made great profit of this money by exchanging it with the neighbouring nations for gold and muſk. We are alſo told by Ludolfus, in his *Hiſtoria Æthiopica*, that in the country of the Abyſſines there are mountains of ſalt, the which when dug out is ſoft, but ſoon grows hard; and that this ſalt ſerves them inſtead of money to buy all things. The ſame is confirmed by Ramuſio. Salt.

Mr Boyle diſcovered common ſalt in human blood and urine. "I have obſerved it (ſays Mr Brownrigg), not only in human urine, but alſo in that of dogs, horſes, and black cattle. It may eaſily be diſcovered in theſe, and many other liquids impregnated with it, by certain very regular and beautiful ſtarry figures which appear in their ſurfaces after congelation. Theſe figures I firſt obſerved in the great froſt in the year 1739. The dung of ſuch animals as feed upon graſs or grain, doth alſo contain plenty of common ſalt."

Naturaliſts, obſerving the great variety of forms under which this ſalt appears, have thought fit to rank the ſeveral kinds of it under certain general claſſes; diſtinguiſhing it, moſt uſually, into rock or foſſil ſalt, ſea-ſalt, and brine or fountain ſalt. To which claſſes, others might be added, of thoſe muriatic ſalts which are found in vegetable and animal ſubſtances. Theſe ſeveral kinds of common ſalt often differ from each other in their outward form and appearance, or in ſuch accidental properties as they derive from the heterogeneous ſubſtances with which they are mixed. But when perfectly pure, they have all the ſame qualities; ſo that chemiſts, by the exacteſt inquiries, have not been able to diſcover any eſſential difference between them; for which reaſon we ſhall diſtinguish common ſalt after a different manner, into the three following kinds, *viz.* into rock or native ſalt, bay ſalt, and white ſalt.

By *rock ſalt*, or *native ſalt*, is underſtood all ſalt dug out of the earth, which hath not undergone any artificial preparation. Under the title of *bay ſalt* may be ranked all kinds of common ſalt, extracted from the water wherein it is diſſolved, by means of the ſun's heat, and the operation of the air; whether the water from which it is extracted be ſea-water, or natural brine drawn from wells and ſprings, or ſalt water ſtagnating in ponds and lakes. Under the title of *white ſalt*, or *boiled ſalt*, may be included all kinds of common ſalt extracted by coction from the water wherein it is diſſolved; whether this water be ſea water, or the ſalt water of wells, fountains, lakes, or rivers; or water of any ſort impregnated with rock-ſalt, or other kinds of common ſalt.

The firſt of theſe kinds of ſalt is in ſeveral countries found ſo pure, that it ſerves for moſt domeſtic uſes, without any previous preparation (triture excepted); for of all natural ſalts rock-ſalt is the moſt abundantly furniſhed by nature in various parts of the world, being found in large maſſes, occupying great tracts of land. It is generally formed in ſtrata under the ſurface of the earth,

(A) Amongſt the ſalt mines of chief note are thoſe of Northwich in Cheſhire, Altemonte in Calabria, Hall in Tyrol, Cardona in Catalonia: alſo thoſe ſtupendous mines at Wilieczka of Poland, and Scowar in Upper Hungary; of which ſee accounts in Phil. Tranſ. No. 61. and 413.

I

Salt. earth, as in Hungary, Muſcovy, Siberia, Poland, Calabria, Egypt, Ethiopia, and the Eaſt Indies. "In England (ſays Magellan), the ſalt mines at Northwich are in a high ground, and contain it in layers or ſtrata of various colours, of which the yellow and brown are the moſt plentiful, as I have obſerved on the ſpot, which I viſited in June 1782, in company with my worthy and learned friend Mr Volta, profeſſor of Natural Philoſophy in the Univerſity of Pavia, and well known by his great abilities, and many diſcoveries in that branch of knowledge. The mine into which we deſcended was excavated in the form of a vaſt dome or vault under ground, ſupported by various columns of the ſalt, that were purpoſely left to ſupport the incumbent weight. And the workmen having lighted a number of candles all round its circumference, it furniſhed us with the moſt agreeable and ſurpriſing ſight, whilſt we were deſcending in the large tub, which ſerves to bring up the lumps that are broken from the mine, &c. See the deſcription of the famous ſalt-mines of Wilieczka in Poland, by Mr Bernard, in the *Journal de Phyſique*, vol. 16. for 1780, pag. 459, in which the miraculous tales concerning thoſe ſubterraneous habitations, villages, and towns, are reduced to their proper magnitude and eſtimate." But the Engliſh foſſil ſalt is unfit for the uſes of the kitchen, until by ſolution and coction it is freed from ſeveral impurities, and reduced into white ſalt. The Britiſh white ſalt alſo is not ſo proper as ſeveral kinds of bay ſalt for curing fiſh and ſuch fleſh-meats as are intended for ſea proviſions, or for exportation into hot countries. So that for theſe purpoſes we are obliged, either wholly or in part, to uſe bay ſalt, which we purchaſe in France, Spain, and other foreign countries.

However, it does not appear that there is any other thing requiſite in the formation of bay ſalt than to evaporate the ſea-water with an exceedingly gentle heat; and it is even very probable, that our common ſea-ſalt by a ſecond ſolution and cryſtallization might attain the requiſite degree of purity. Without entering into any particular detail of the proceſſes uſed for the preparation of bay-ſalt in different parts of the world, we ſhall content ourſelves with giving a brief account of the beſt methods of preparing common ſalt.

At ſome convenient place near the ſea-ſhore is erected the ſaltern. This is a long, low building, conſiſting of two parts; one of which is called the *fore-houſe* and the other the *pan-houſe* or *boiling-houſe*. The fore-houſe ſerves to receive the fuel, and cover the workmen; and in the boiling-houſe are placed the furnace, and pan in which the ſalt is made. Sometimes they have two pans, one at each end of the ſaltern; and the part appropriated for the fuel and workmen is in the middle.

Brownrigg on the Art of Preparing Salt.

The furnace opens into the fore-houſe by two mouths, beneath each of which is a mouth to the aſh-pits. To the mouths of the furnace doors are fitted; and over them a wall is carried up to the roof, which divides the fore-houſe from the boiling-houſe, and prevents the duſt of the coal and the aſhes and ſmoke of the furnace from falling into the ſalt pan. The fore-houſe communicates with the boiling-houſe by a door, placed in the wall which divides them.

The body of the furnace conſiſts of two chambers, divided from each other by a brick partition called the *mid feather*; which from a broad baſe terminates in a narrow edge nigh the top of the furnace; and by means of ſhort pillars of caſt iron erected upon it, ſupports the bottom of the ſalt pan; it alſo fills up a conſiderable part of the furnace, which otherwiſe would be too large, and would conſume more coals than, by the help of this contrivance, are required. To each chamber of the furnace is fitted a grate, through which the aſhes fall into the aſh-pits. The grates are made of long bars of iron, ſupported underneath by ſtrong croſs bars of the ſame metal. They are not continued to the fartheſt part of the furnace, it being unneceſſary to throw in the fuel ſo far: for the flame is driven from the fire on the grate to the fartheſt part of the furnace; and from thence paſſes together with the ſmoke, through two flues into the chimney; and thus the bottom of the ſalt pan is everywhere equally heated. Salt.

The ſalt pans are made of an oblong form, flat at the bottom, with the ſides erected at right angles; the length of ſome of theſe pans is 15 feet, in breadth 12 feet, and the depth 16 inches; but at different works they are of different dimenſions. They are commonly made of plates of iron, joined together with nails, and the joints are filled with a ſtrong cement. Within the pan five or ſix ſtrong beams of iron are fixed to its oppoſite ſides, at equal diſtances, parallel to each other and to the bottom of the pan, from which they are diſtant about eight inches. From theſe beams hang down ſtrong iron hooks, which are linked to other hooks or claſps of iron firmly nailed to the bottom of the pan; and thus the bottom of the pan is ſupported, and prevented from bending down or changing its figure. The plates moſt commonly uſed are of malleable iron, about four feet and a half long, a foot broad, and the third of an inch in thickneſs. The Scots prefer ſmaller plates, 14 or 15 inches ſquare. Several make the ſides of the pan, where they are not expoſed to the fire, of lead; thoſe parts, when made of iron, being found to conſume faſt in ruſt from the ſteam of the pan. Some have uſed plates of caſt iron, five or ſix feet ſquare, and an inch in thickneſs; but they are very ſubject to break when unequally heated, and ſkaken (as they frequently are) by the violent boiling of the liquor. The cement moſt commonly uſed to fill the joints is plaſter made of lime.

The pan, thus formed, is placed over the furnace, being ſupported at the four corners by brick work; but along the middle, and at the ſides and ends, by round pillars of caſt iron called *taplins*, which are placed at three feet diſtance from each other, being about eight inches high, and at the top, where ſmalleſt, four inches in diameter. By means of theſe pillars the heat of the fire penetrates equally to all parts of the bottom of the pan, its four corners only excepted. Care is alſo taken to prevent the ſmoke of the furnace from paſſing into the boiling houſe, by bricks and ſtrong cement, which are cloſely applied to every ſide of the ſalt pan. In ſome places, as at Blyth in Northumberland, beſides the common ſalt pans here deſcribed, they have a preparing-pan placed between two ſalt pans, in the middle part of the building, which in other works is the fore houſe. The ſea-water being received into this preparing-pan, is there heated and in part evaporated by the flame and heat conveyed under it through flues from the two furnaces of the ſalt pans. And the hot water, as occaſion requires, is conveyed through troughs from

Salt. from the preparing pan into the ſalt pans. Various other contrivances have been invented to leſſen the expence of fuel, and ſeveral patents have been obtained for that purpoſe; but the ſalt-boilers have found their old methods the moſt convenient. Salt.

Between the ſides of the pan and walls of the boiling-houſe, there runs a walk five or ſix feet broad, where the workmen ſtand when they draw the ſalt, or have any other buſineſs in the boiling-houſe. The ſame walk is continued at the end of the pan, next to the chimney; but the pan is placed cloſe to the wall at the end adjoining to the fore-houſe.

The roof of the boiling-houſe is covered with boards faſtened on with nails of wood, iron nails quickly mouldering into ruſt. In the roof are ſeveral openings, to convey off the watery vapours: and on each ſide of it a window or two, which the workmen open when they look into the pan whilſt it is boiling.

Not far diſtant from the ſaltern, on the ſea-ſhore, between full ſea and low-water marks, they alſo make a little pond in the rocks, or with ſtones on the ſand, which they call their *ſump*. From this pond they lay a pipe, through which, when the tide is in, the ſea-water runs into a well adjoining to the ſaltern; and from this well they pump it into troughs, by which it is conveyed into their ſhip or ciſtern, where it is ſtored up until they have occaſion to uſe it.

The ciſtern is built cloſe to the ſaltern, and may be placed moſt conveniently between the two boiling-houſes, on the back ſide of the fore-houſe; it is made either of wood, or brick and clay; it ſometimes wants a cover, but ought to be covered with a ſhed, that the ſalt-water contained therein may not be weakened by rains, nor mixed with ſoot and other impurities. It ſhould be placed ſo high, that the water may conveniently run out of it, through a trough, into the ſalt-pans.

Beſides the buildings already mentioned, ſeveral others are required; as ſtore-houſes for the ſalt, ciſterns for the bittern, an office for his majeſty's ſalt-officers, and a dwelling-houſe for the ſalt-boilers.

All things being thus prepared, and the ſea-water having ſtood in the ciſtern till the mud and ſand are ſettled to the bottom, it is drawn off into the ſalt-pan: And at the four corners of the ſalt-pan, where the flame does not touch its bottom, are placed four ſmall lead pans called *ſcratch pans*, which, for a ſalt-pan of the ſize above-mentioned, are uſually about a foot and an half long, a foot broad, and three inches deep; and have a bow or circular handle of iron, by which they may be drawn out with a hook, when the liquor in the pan is boiling.

The ſalt pan being filled with ſea-water, a ſtrong fire of pit-coal is lighted in the furnace; and then for a pan which contains about 1400 gallons, the ſalt-boiler takes the whites of three eggs, and incorporates them well with two or three gallons of ſea water, which he pours into the ſalt-pan while the water contained therein is only lukewarm; and immediately ſtirs it about with a rake, that the whites of eggs may every where be equally mixed with the ſalt-water.

Inſtead of whites of eggs, at many ſalterns, as at moſt of thoſe nigh Newcaſtle, they uſe blood from the butchers, either of ſheep or black cattle, to clarify the ſea-water: And at many of the Scots ſalterns they do not give themſelves the trouble of clarifying it. Salt.

As the water grows hot, the whites of eggs ſeparate from it a black frothy ſcum, which ariſes to the ſurface of the water, and covers it all over. As ſoon as the pan begins to boil, this ſcum is all riſen, and it is then time to ſkim it off.

The moſt convenient inſtruments for this purpoſe are ſkimmers of thin aſh boards, ſix or eight inches broad, and ſo long that they may reach above half way over the ſalt-pan. Theſe ſkimmers have handles fitted to them; and the ſalt-boiler and his aſſiſtant, each holding one of them on the oppoſite ſides of the pan, apply them ſo to each other that they overlap in the middle, and beginning at one end of the pan, carry them gently forward together, along the ſurface of the boiling liquor, to the other end; and thus, without breaking the ſcum, collect it all to one end of the pan, from whence they eaſily take it out.

After the water is ſkimmed, it appears perfectly clear and tranſparent; and they continue boiling it briſkly, till ſo much of the freſh or aqueous part is evaporated, that what remains in the pan is a ſtrong brine almoſt fully ſaturated with ſalt, ſo that ſmall ſaline cryſtals begin to form on its ſurface; which operation, in a pan filled 15 inches deep with water, is uſually performed in five hours.

The pan is then filled up a ſecond time with clear ſea-water drawn from the ciſtern; and about the time when it is half filled, the ſcratch-pans are taken out, and being emptied of the ſcratch found in them, are again placed in the corners of the ſalt-pan. The ſcratch taken out of theſe pans is a fine white calcareous earth found in the form of powder, which ſeparates from the ſea-water during its coction, before the ſalt begins to form into grains. This ſubtile powder is violently agitated by the boiling liquor, until it is driven to the corners of the pan, where the motion of the liquor being more gentle, it ſubſides into the ſcratch pans placed there to receive it, and in them it remains undiſturbed, and thus the greateſt part of it is ſeparated from the brine.

After the pan hath again been filled up with ſea-water, three whites of eggs are mixed with the liquor, by which it is clarified a ſecond time, in the manner before deſcribed; and it is afterwards boiled down to a ſtrong brine as at firſt; which ſecond boiling, may take up about four hours.

The pan is then filled up a third time with clear ſea-water; and after that, a fourth time; the liquor being each time clarified and boiled down to a ſtrong brine, as before related; and the ſcratch-pans being taken out and emptied every time that the pan is filled up.

Then, at the fourth boiling, as ſoon as the cryſtals begin to form on the ſurface of the brine, they ſlacken the fire, and only ſuffer the brine to ſimmer, or boil very gently. In this heat they conſtantly endeavour to keep it all the time that the ſalt corns or granulates, which may be nine or ten hours. The ſalt is ſaid to granulate, when its minute cryſtals cohere together into little maſſes or grains, which ſink down in the brine and lie at the bottom of the ſalt-pan.

When moſt of the liquor is evaporated, and the ſalt thus lies in the pan almoſt dry on its ſurface, it is then

Salt. time to draw it out. This part of the process is performed by raking the salt to one side of the pan into a long heap, where it drains a while from the brine, and is then filled out into barrows or other proper vessels, and carried into the store-house, and delivered into the custody of the warehouse keeper. And in this manner the whole process is performed in 24 hours; the salt being usually drawn every morning.

In the store-house the salt is put into hot drabs, which are partitions like stalls for horses, lined on three sides and at the bottom with boards, and having a sliding-board on the fore-side to put in or draw out as occasion requires. The bottoms are made shelving, being highest at the back-side, and gradually inclining forwards; by which means the saline liquor, which remains mixed with the salt, easily drains from it; and the salt, in three or four days, becomes sufficiently dry; and is then taken out of the drabs, and laid up in large heaps, where it is ready for sale.

The saline liquor which drains from the salt is not a pure brine of common salt, but hath a sharp and bitter taste, and is therefore called *bittern*; this liquor, at some works, they save for particular uses, at others throw away. A considerable quantity of this bittern is left at the bottom of the pan after the process is finished; which, as it contains much salt, they suffer to remain in the pan, when it is filled up with sea-water. But at each process this liquor becomes more sharp and bitter, and also increases in quantity: so that, after the third or fourth process is finished, they are obliged to take it out of the pan; otherwise it mixes in such quantities with the salt, as to give it a bitter taste, and disposes it to grow soft and run in the open air, and renders it unfit for domestic uses.

After each process there also adheres to the bottom and sides of the pan a white stony crust, of the same calcareous substance with that before collected from the boiling liquor. This the operators call *stone-scratch*, distinguishing the other found in the lead-pans by the name of *powder-scratch*. Once in eight or ten days they separate the stone-scratch from their pans with iron picks, and in several places find it a quarter of an inch in thickness. If this stony crust is suffered to adhere to the pan much longer, it grows so thick that the pan is burnt by the fire, and quickly wears away.

In M. de Pagés's Travels round the World, we find the following important fact. "I had been anxious (says that author) to ascertain by comparison, whether sea-water contains salt in greater quantity under the torrid than under the other zones; and my experiments on this subject served to show, contrary to what I expected, that sea water is impregnated with salt in less quantity within than without the tropics." These experiments were made on a hundred pounds of sea-water, taken at the depth of ten fathoms, and weighed in water scales. M. de Pagés has given a table of these experiments, from which it appears that 100 lb. of sea-water in 46° 12″ S. lat. gave 4½ lb. of salt, and in 1° 16″ only 3½ lb.; and that in 74 N. lat. it gave 4¾ lb. and in 4° 22′ only 3½ lb. these being the highest and lowest latitudes in which the experiments were made, and also the greatest and least quantities of salt.

Duty on Salt, a distinct branch of the king of England's extraordinary revenue, and consists in an excise of 3s. 4d. per bushel imposed upon all salt, by several statutes of King William and other subsequent reigns. This is not generally called an excise, because under the management of different commissioners: but the commissioners of the salt-duties have, by statute 1 Ann, c. 21. the same powers, and must observe the same regulations, as those of other excises. This tax had usually been only temporary: but by statute 26 Geo. II. c. 3. was made perpetual.

Triple Salts, a kind of salts formed by the union of three ingredients: the common neutrals being composed only of two. They are but lately discovered; and it is chiefly to the industry of Mr Bergman that we owe the knowledge we have of them. Sometimes we meet even with salts of four ingredients; in which case we call the resulting compounds *quadruple* salts. The most remarkable of these complicated substances are the following.

1. *Aphronitrum*, or mineral alkali, combined with a small quantity of calcareous earth. The three ingredients here are fixed air, pure alkali, and calcareous earth. "This salt (says Cronstedt) is so strongly united with the calcareous earth, that the latter enters with it into the very crystals of the salt; though, by repeated solutions, the earth is by degrees separated from it, and falls to the bottom after every solution." Cartheuser asserts, that, on throwing into its solution in water a fixed mineral alkali, the calcareous earth was precipitated; and on the contrary, by adding oil of vitriol, nitrous acid was expelled, and a Glauber's salt produced; "from which (says M. Magellan) it is evident, that the aphronitrum is a triple salt arising from the combination of the nitrous acid with calcareous earth and mineral fixed alkali." Wallerius mentions three species of this salt; *viz.* one which contains only a mixture of calcareous earth with fixed mineral alkali. This, he says, is the aphronitrum of the ancients; but he thinks that it ought to be rather called *aphronatron*, as they bestowed the name of *natron* upon the mineral alkali. The second species is that described by Cronstedt under the title of *calcareous nitre*. The third is that described by Hoffman under the title of *aphronitrum januense*, into whose composition the vitriolic acid enters. It is a kind of Glauber's salt, and is frequently confounded with it.

The aphronitrum of Cronstedt is described by him as appearing on old walls and below vaults, or in places where it cannot be washed away by the rain. When it contains any considerable quantity of calcareous earth, it shoots into rhomboidal crystals, a figure frequently affected by the calcareous earth when it shoots into crystals: but when the aphronitrum is purer, it forms prismatic crystals. From these circumstances, M. Magellan thinks, that the aphronitrum is not only a triple but a multiple salt; as these pieces of old mortar, covered with this white frost, on ancient walls, are the very same from which the saltpetre-makers extract the mother water of nitre; after mixing with it the vegetable ashes to furnish the alkali.

2. Common salt with magnesia, or mineral alkali, contaminated by muriatic magnesia. This is a compound of common salt with magnesia, and is very deliquescent, owing to the compound of magnesia and spirit

Salt. rit of salt; for neither mineral alkali nor pure sea-salt are at all deliquescent in the air.

3. Vitriolated magnesia with vitriol of iron, or Epsom salt contaminated with copperas. This, according to M. Monet, is found in some mineral waters.

4. Native alum contaminated with copperas. This is sometimes found in the aluminous schistus, and efflorescs in a feathery form, and is perhaps the plumose alum of the ancients.

5. Native alum contaminated with sulphur. Dr Withering informs us, that this salt is met with about Wednesburg and Belston, two places in Staffordshire, where the coal-pits are on fire. It sublimes to the surface, whence it may be collected in considerable quantity during dry or frosty weather. Our author, however, does not certainly affirm that this is a true chemical union, but the parts, he says, cannot be distinguished by the eye. It is kept in a deliquescent state by an access of vitriolic acid.

6. Native alum contaminated by vitriolated cobalt. This is found in some of the mines of Herregrund and Idria, where it shoots into long and slender filaments. M. Magellan supposes that this may be the *trichites* of the Greeks. On dissolving it in water, the presence of the vitriolic acid is discovered by adding a solution of terra ponderosa in muriatic acid; the phlogisticated alkali throws down a precipitate of cobalt, which forms a blue glass with cobalt or microcosmic salt.

7. Vitriol of copper with iron, the *vitriolum ferreo-cupreum cyaneum* of Linnæus. It is also called *Vitriol of Hungary*, because found in plenty in that country. Its colour is that of blue mixed with green; but sometimes the one shade prevails, and sometimes the other.

8. Vitriol of copper, iron, and zinc, is prepared in Sweden from the water pumped out of the copper mines at Dalame. The copper does not precipitate from a solution of this salt by rubbing it on iron, as is the case with the common blue vitriol. Large crystals of this salt are often found in the water of the copper mines from whence it is prepared.

9. Vitriol of copper and zinc. This is a quadruple salt, styled by Linnæus *Vitriolum ferreo-zinceo cupreum cyaneum*. Its colour is blue inclining to green; and it does not precipitate the copper by rubbing on iron, as the common blue vitriol does. It is called the blue vitriol of Goslar. Mongez makes a separate article of a compound salt mentioned by Wallerius, consisting also of a vitriolated copper with zinc, but whose crystals are of a fine red colour, found lately in the mines of Fahlun in Sweden. He adds, that the pale-blue colour of the former salt shows the predominancy of the copper, by which it is necessarily distinguished from the latter, where the vitriol is over-saturated. M. Magellan, however, is of opinion, that the red colour is owing to a proper quantity of iron in a dephlogisticated state, which has been overlooked in that compound. To this kind also Wallerius refers the yellowish vitriol found in Hungary.

10. Vitriol of iron and zinc; the green vitriol from Goslar in the Hartz; the *vitriolum zinceo-ferreum viride* of Linnæus. It is of a pale-green colour.

Salt-Mines. See Salt.

Rock-Salt. See Salt.

Salt-Water, or *Sea-water (Distillation of)*. See *Sea-Water*. Salt of Springs.

Neutral Salts. See Chemistry, n° 172, 1180, and 1331.

Salt-Springs. Of these there are great numbers in different parts of the world, which undoubtedly have their origin from some of the large collections of fossil salt mentioned under the article *Common Salt*. See that article, and likewise Spring.

SALTIER, one of the honourable ordinaries.—See Heraldry, p. 452, and Plate CCXXX.

This, says G. Leigh, in his Accedence of Arms, p. 70. was anciently made of the height of a man, and driven full of pins, the use of which was to scale walls, &c. Upton says it was an instrument to catch wild beasts, whence he derives this word from *saltus*, i. e. "a forest." The French call this ordinary *sautoir*, from *sauter* "to leap;" because it may have been used by soldiers to leap over walls of towns, which in former times were but low; but some modern authors think it is borne in imitation of St Andrew's cross.

SALTING MEAT FOR THE USE OF THE NAVY. The following is the method recommended by the late admiral Sir Charles Knowles. When the ox is killed, let it be skinned and cut up into pieces fit for use as quick as possible, and salted while the meat is hot. For which purpose we must have a sufficient quantity of saltpetre and bay-salt pounded together and made hot in an oven of each equal parts; with this sprinkle the meat at the rate of about two ounces to the pound; then lay the pieces on shelving boards to drain for 24 hours; which done, turn them and repeat the same operation, and let them lie for 24 hours longer. By this time the salt will be all melted, and have penetrated the meat, and the pieces be drained off; each piece must then be wiped dry with clean coarse cloths. A sufficient quantity of common salt must then be made hot likewise in an oven, and mixed when taken out with about one-third of brown sugar: then the casks being ready, rub each piece well with this mixture, and pack them well down, allowing about half a pound of the salt and sugar to each pound of meat, add it will keep good several years.

It is best to proportion the casks to the quantity used at one time, as the less it is exposed to the air the better. The same process does for pork, only a larger quantity of salt and less sugar must be used; but the preservation of both depends equally upon the meat being hot when first salted.

One pound of beef requires two ounces of saltpetre and two ounces of bay-salt, because it is to be sprinkled twice; an ounce of each to a pound of beef both times. The saltpetre requisite for 100 lb. of beef is 12½lb. which at 12d. per lb. is 12s. 6d; and the same quantity of bay-salt (for 100 lb. of beef), at three half-pence per lb. is 1 s. 6 d.; of brown sugar and common salt mixed together half a pound is required, the former in the proportion of one-third, the latter of two-thirds, to a pound of beef. The brown sugar at 8 d. per pound. A hundred pounds of beef will take 250 ounces of it, which costs 10 s. 5 d. The quantity of common salt requisite for 100 lb. of beef is 533 ounces which at 2 d. per lb. amounts to 5 s. 6d. The expence therefore will stand thus.

Saltpetre,

Salvadora. Saltſburg.

Saltpetre, 12½ lb. for 100 lb. of beef, is	L. 0	12	6
Bay-ſalt, 12½ lb. for do. is	0	1	6
Brown-ſugar, 250 oz. for do. is	0	10	5
Beef, 100 lb. at 6 d. per pound, is	2	10	0
Three caſks for it at 1 s. 6d. each,	0	4	6
Labour, and heating the oven twice,	0	4	0
Common ſalt, 533 oz. for do. is	0	5	6
	L. 4	8	5

Theſe articles are taken high; and if beef coſts 6 d. per pound, meat cured thus will coſt leſs than 1 s. per pound; and therefore comes much cheaper than live-ſtock in long ſea-voyages.

SALTPETRE. See CHEMISTRY, n° 740.

SALTSBURG, an archbiſhopric of Germany, in the circle of Bavaria, bounded on the eaſt by Stiria and the Upper Auſtria, on the weſt by the county of Tyrol, on the north by the duchy of Bavaria, and on the ſouth by the duchy of Carinthia and the biſhopric of Brixen. It is ſaid to be about 100 miles from eaſt to weſt, and upwards of 60 from north to ſouth. With reſpect to the ſoil, it is very mountainous, yielding, however, excellent paſturage, and, in conſequence of that, abounding in cattle, and horſes remarkable for their mettle and hardineſs. This country is particularly noted for the great quantities of ſalt it produces, and its ſtrong paſſes and caſtles. Here are alſo conſiderable mines of gold, ſilver, copper, lead, iron, and lapis calaminaris, with quarries of marble, and a natural hot-bath. The principal rivers are the Salza, the Inn, the Ens, and Muer; which, as well as the lakes and other ſtreams, are well-ſtored with fiſh. The peaſants here are all allowed the uſe of arms, and trained to military duty. There are no nobles in the country, and moſt of the lands belong to the clergy. The ſtates conſiſt of the prelates, the cities, and towns. Notwithſtanding this country is under the power of a popiſh eccleſiaſtic, and the violent, arbitrary, and oppreſſive manner in which the Proteſtants have always been treated, great numbers of them ſtill remained in it till the year 1732, when no leſs than 30,000 of them withdrew from it, diſperſing themſelves in the ſeveral Proteſtant ſtates of Europe, and ſome of them were even ſent from Great Britain to the American colonies. Beſides braſs and ſteel wares, and all ſorts of arms and artillery, there are manufactures of coarſe cloth and linen here. The archbiſhop has many and great prerogatives: he is a prince of the empire, and perpetual legate of the holy ſee in Germany, of which he is alſo primate. He has the firſt voice in the diet of this circle, and next to the electors in that of the empire, in the college of princes, in which he and the archduke of Auſtria preſide by turns. No appeal lies from him either in civil or eccleſiaſtical cauſes, but to the pope alone; and he is intitled to wear the habit of a cardinal. He has alſo the nomination to ſeveral biſhoprics; and the canonicates that fall vacant in the months in which the popes, by virtue of the concordat, are allowed to nominate, are all in his gift. His ſuffragans are the biſhops of Freyſingen, Ratiſbon, Brixen, Gurk, Chiemſee, Seckau, and Lavant; and of theſe, the four laſt are nominated, and even confirmed by him, and not by the pope. At the diet of the empire, his envoy takes place of all the princes that are preſent, under the degree of an elector. His revenue ſaid to amount to near 200,000 l. a year, a great part of it ariſing from the ſalt-works. He is able to raiſe 25,000 men; but keeps in conſtant pay, beſides his guards, only one regiment, conſiſting of 1000 men. His court is very magnificent; and he has his hereditary great officers, and high colleges. The chapter conſiſts of 24 canons, who muſt be all noble, but are obliged only to four months reſidence. At his acceſſion to the ſee, the archbiſhop muſt pay 100,000 crowns to Rome for the pall. There is an order of knighthood here, inſtituted in 1711, in honour of St Rupert, who was the firſt biſhop of Saltſburg about the beginning of the 8th century.

SALTSBURG, the capital of a German archbiſhopric of the ſame name, and which takes its own from the river Salza, on which it ſtands, and over which it has a bridge. It is a very handſome place, well fortified, and the reſidence of the archbiſhop. The houſes are high, and all built of ſtone: the roofs are in the Italian taſte, and you may walk upon them. The caſtle here is very ſtrong, and as ſtrongly garriſoned, and well provided with proviſions and warlike ſtores. The archbiſhop's palace is magnificent; and in the area before it is a fountain, eſteemed the largeſt and grandeſt in Germany. The ſtables are very lofty; and the number of the horſes uſually kept by the archbiſhop is ſaid to be upwards of 200. The city, of which one part ſtands on a ſteep rock, is well built, but the ſtreets are narrow and badly paved. Beſides the abovementioned, there are two other ſtately palaces belonging to the archbiſhop, one of which is called the *Nuebau*, and the other *Mirabella*. The latter of theſe has a very beautiful garden; and the number of trees in the orangery is ſo great, that Mr Keyſler tells us, 20,000 oranges have been gathered from them in one year. The river Salza runs cloſe by the walls of this garden. There are a great many other fine ſtructures in the city, public and private, ſuch as palaces, monaſteries, hoſpitals, and churches. In the cathedral dedicated to St Rupert (the apoſtle of Bavaria, and a Scotchman by birth), all the altars are of marble of different kinds, and one of the organs has above 3200 pipes. The whole ſtructure is extremely handſome. It is built of freeſtone in imitation of St Peter's at Rome. The portico is of marble, and the whole is covered with copper. Before the portico there is a large quadrangular place, with arches and galleries, in which is the prince's reſidence and there is a ſtatue of Peter. In the middle of this place is an image of the Virgin in bronze; it is fine, but of an unnatural ſize. There are large areas encompaſſed with handſome buildings on both ſides of the church. In the middle of that which is to the left, there is a moſt magnificent fountain of marble, and ſome valuable figures of gigantic ſize. There is likewiſe a fountain in that to the right, but it is not to be compared with the former one, and the Neptune of it makes but a very pitiful figure. This town contains many more excellent building and ſtatues, which remind one that the borders of Italy are not far diſtant. The winter and ſummer riding ſchools here are noble ſtructures. The univerſity was founded in 1620, and committed to the care of the Benedictines. Beſides it, there are two colleges, in which the young noblemen are educated. E. Long. 33. 0. N. Lat. 47. 45.

SALVADORA, in botany: A genus of the monogynia order, belonging to the tetrandria claſs of plants;

Salvage || Salvia.

plants; and in the natural method ranking with thoſe of which the order is doubtful. The calyx is quadrifid; there is no corolla; the berry is monoſpermous; and the ſeed covered with an antlus or looſe coat.

SALVAGE-MONEY, a reward allowed by the civil and ſtatute law for the ſaving of ſhips or goods from the danger of the ſea, pirates, or enemies.—Where any ſhip is in danger of being ſtranded, or driven on ſhore, juſtices of the peace are to command the conſtables to aſſemble as many perſons as are neceſſary to preſerve it; and, on its being preſerved by their means, the perſons aſſiſting therein ſhall, in 30 days after, be paid a reaſonable reward for their ſalvage; otherwiſe the ſhip or goods ſhall remain in the cuſtody of the officers of the cuſtoms as a ſecurity for the ſame.

SALVATION, means the ſafety or preſervation of any thing which is or has been in danger, and is generally uſed in a religious ſenſe, when it means preſervation from eternal death, or reception to the happineſs of heaven, which is now offered to all men by the Chriſtian religion upon certain conditions. The Hebrews but rarely make uſe of concrete terms as they are called, but often of abſtracted. Thus, inſtead of ſaying that God ſaves them and protects them, they ſay that God is their ſalvation. Thus the word of ſalvation, the joy of ſalvation, the rock of ſalvation, the ſhield of ſalvation, the horn of ſalvation, &c. is as much as to ſay, The word that declares deliverance; the joy that attends the eſcaping a great danger, a rock where any one takes refuge, and where he may be in ſafety from his enemy; a buckler, that ſecures him from the arm of the enemy; a horn or ray of light, of happineſs and ſalvation, &c. See THEOLOGY, &c.

SALVATOR ROSA. See ROSA.

SALVE REGINA, among the Romaniſts, the name of a Latin prayer, addreſſed to the Virgin, and ſung after complines, as alſo upon the point of executing a criminal. Durandus ſays, it was compoſed by Peter biſhop of Compoſtella. The cuſtom of ſinging the *ſalve regina* at the cloſe of the office was begun by order of St Dominic, and firſt in the congregation of Dominicans at Bologna, about 1237. Gregory IX. firſt appointed it to be general. St Bernard added the concluſion, *O dulcis! O pia*, &c.

SALVIA, SAGE: A genus of the monogynia order, belonging to the digynia claſs of plants; and in the natural method ranking under the 42d order, *Verticillatæ*. The corolla is unequal; and the filaments placed croſswiſe on a pedicle. The moſt remarkable ſpecies are,

1. The officinalis, or common large ſage, which is cultivated in gardens, of which there are the following varieties: 1. The common green ſage. 2. The wormwood ſage. 3. The green ſage, with a variegated leaf. 4. The red ſage. 5. The red ſage with a variegated leaf. Theſe are accidental variations, and therefore are not enumerated as ſpecies. The common ſage grows naturally in the ſouthern parts of Europe, but is in Britain cultivated in gardens for uſe; but that variety with red or blackiſh leaves is the moſt common in the Britiſh gardens; and the wormwood ſage is in greater plenty there than the common green-leaved ſage, which is but in few gardens.

2. The tomentoſa, generally titled *balſamic ſage* by the gardeners. The ſtalks of this do not grow ſo upright as thoſe of the common ſage; they are very hairy, and divided into ſeveral branches, which are garniſhed with broad heart-ſhaped woolly leaves ſtanding upon long foot-ſtalks; they are ſawed on their edges, and their upper ſurfaces are rough: the leaves, which are upon the flower-ſtalks, are oblong and oval, ſtanding upon ſhorter foot ſtalks, and are very ſlightly ſawed on their edges; they grow in whorled ſpikes toward the top of the branches; the whorls are pretty far diſtant, but few flowers in each; they are of a pale blue, about the ſize of thoſe of the common ſort. This ſage is preferred to all the others for making tea.

Salvia || Salutation.

2. The auriculata, common ſage of virtue, which is alſo well known in the gardens and markets. The leaves of this is narrower than thoſe of the common ſort: they are hoary, and ſome of them are indented on their edges towards the baſe, which indentures have the appearance of ears. The ſpikes of flowers are longer than thoſe of the two former ſorts, and the whorls are generally naked, having no leaves between them. The flowers are ſmaller, and of a deeper blue than thoſe of common red ſage.

4. The pomifera, with ſpear-ſhaped oval entire leaves, grows naturally in Crete. This hath a ſhrubby ſtalk, which riſes four or five feet high, dividing into ſeveral branches. The flowers grow in ſpikes at the end of the branches; they are of a pale blue colour, and have obtuſe empalements. The branches of this ſage have often punctures made in them by inſects, at which places grow large protuberances as big as apples, in the ſame manner as the galls upon an oak, and the rough balls on the briar.

All the ſorts of ſage may be propagated by ſeeds, if they can be procured; but, as ſome of them do not perfect their ſeeds in cold countries and moſt of the ſorts, but eſpecially the common kinds for uſe, are eaſily propagated by ſlips, it is not worth while to raiſe them from ſeeds.

SALVIANUS, an ancient father of the Chriſtian church, who flouriſhed in the 5th century, and was well ſkilled in the ſciences. It is ſaid he lived in continence with his wife Palladia, as if ſhe had been his ſiſter; and that he was ſo afflicted at the wickedneſs of that age, that he was called the *Jeremiah of the fifth century*. He acquired ſuch reputation for his piety and learning, that he was named the *maſter of the biſhops*. He wrote a Treatiſe on Providence; another on Avarice; and ſome epiſtles, of which Baluze has given an excellent edition; that of Conrade Ritterſhuſius, in 2 vols octavo, is alſo eſteemed.

SALUTATION, the act of ſaluting, greeting, or paying reſpect and reverence to any one.

Curioſities of Litera-ture.

When men (writes the compiler of *L'Eſprit des Uſages et des Coutumes*) ſalute each other in an amicable manner, it ſignifies little whether they move a particular part of the body, or practiſe a particular ceremony. In theſe actions there muſt exiſt different cuſtoms. Every nation imagines it employs the moſt reaſonable ones; but all are equally ſimple, and none are to be treated as ridiculous. This infinite number of ceremonies may be reduced to two kinds; to reverences or ſalutations; and to the touch of ſome part of the human body. To bend and proſtrate one's ſelf to expreſs ſentiments of reſpect, appears to be a natural motion; for terrified perſons throw themſelves on the earth when they adore inviſible beings. The affectionate touch of the

Salutation. the perſon they ſalute, is an expreſſion of tenderneſs. As nations decline from their ancient ſimplicity, much farce and grimace are introduced. Superſtition, the manners of a people, and their ſituation, influence the modes of ſalutation; as may be obſerved from the inſtances we collect.

Modes of ſalutation have ſometimes very different characters, and it is no unintereſting ſpeculation to examine their ſhades. Many diſplay a refinement of delicacy, while others are remarkable for their ſimplicity, or for their ſenſibility. In general, however, they are frequently the ſame in the infancy of nations, and in more poliſhed ſocieties. Reſpect, humility, fear, and eſteem, are expreſſed much in a ſimilar manner; for theſe are the natural conſequences of the organization of the body. Theſe demonſtrations become, in time, only empty civilities, which ſignify nothing; we ſhall notice what they were originally, without reflecting on what they are.

The firſt nations have no peculiar modes of ſalutation; they know no reverences, or other compliments, or they deſpiſe and diſdain them. The Greenlanders laugh when they ſee an European uncover his head and bend his body before him whom he calls his ſuperior. The iſlanders, near the Philippines, take the hand or foot of him they ſalute, and with it they gently rub their face. The Laplanders apply their noſe ſtrongly againſt that of the perſon they ſalute. Dampier ſays, that at New Guinea they are ſatisfied in placing on their heads the leaves of trees, which have ever paſſed for ſymbols of friendſhip and peace. This is at leaſt a picturesque ſalute.

Other ſalutations are very incommodious and painful; it requires great practice to enable a man to be polite in an iſland ſituated in the Straits of the Sound. Houtman tells us, they ſaluted him in this odd way: "They raiſed his left foot, which they paſſed gently over the right leg, and from thence over his face." The inhabitants of the Philippines bend their body very low, in placing their hands on their cheeks, and raiſing at the ſame time one foot in the air, with their knee bent. An Ethiopian takes the robe of another, and ties it about his own waiſt, ſo that he leaves his friend half naked. This cuſtom of undreſſing on theſe occaſions takes other forms; ſometimes men place themſelves naked before the perſon whom they ſalute; it is to ſhow their humility, and that they are unworthy of appearing in his preſence. This was practiſed before Sir Joſeph Banks, when he received the viſit of two female Otaheitans. Their innocent ſimplicity, no doubt, did not appear immodeſt in the eyes of the *virtuoſo*. Sometimes they only undreſs partially. The Japaneſe only take off a ſlipper; the people of Arracan, their ſandals in the ſtreet, and their ſtockings in the houſe.

In the progreſs of time, it appears ſervile to uncover one's ſelf. The grandees of Spain claim the right of appearing covered before the king to ſhow that they are not ſo much ſubjected to him as the reſt of the nation; and (this writer obſerves) we may remark, that the Engliſh do not uncover their heads ſo much as the other nations of Europe. In a word, there is not a nation (obſerves the humourous Montaigne), even to the people who, when they ſalute, turn their backs on their friends, but that can be juſtified in their cuſtoms. It muſt be obſerved of the negroes, that they are lovers of ludicrous actions, and thus make all their ceremonies farcical. The greater part pull the fingers till they crack. Snelgrave gives an odd repreſentation of the embaſſy which the king of Dahomy ſent to him. The ceremonies of ſalutation conſiſted in the moſt ridiculous contortions. When two negro monarchs viſit, they embrace in ſnapping three times the middle finger. Salutation.

Barbarous nations frequently imprint on their ſalutations the diſpoſitions of their character. When the inhabitants of Carmena (ſays Athenæus) would ſhow a peculiar mark of eſteem, they breathed a vein, and preſented for the beverage of their friend the blood as it iſſued. The Franks tore hair from their head, and preſented it to the perſon they ſaluted. The ſlave cut his hair, and offered it to his maſter. The Chineſe are ſingularly affected in their perſonal civilities: they even calculate the number of their reverences. Theſe are their moſt remarkable poſtures. The men move their hands in an affectionate manner, while they are joined together on the breaſt, and bow their head a little. If they reſpect a perſon, they raiſe their hands joined, and then lower them to the earth in bending the body. If two perſons meet after a long ſeparation, they both fall on their knees, and bend the face to the earth, and this ceremony they repeat two or three times. Surely we may differ here with the ſentiment of Montaigne, and confeſs this ceremony to be ridiculous. It ariſes from their national affectation. They ſubſtitute artificial ceremonies for natural actions. Their expreſſions mean as little as their ceremonies. If a Chineſe is aſked how he finds himſelf in health? he anſwers, *Very well; thanks to your abundant felicity.* If they would tell a man that he looks well, they ſay, *Proſperity is painted on your face*; or, *Your air announces your happineſs.* If you render them any ſervice, they ſay, *My thanks ſhould be immortal.* If you praiſe them, they anſwer, *How ſhall I dare to perſuade myſelf of what you ſay of me?* If you dine with them, they tell you at parting, *We have not treated you with ſufficient diſtinction.* The various titles they invent for each other it would be impoſſible to tranſlate.

It is to be obſerved, that all theſe anſwers are preſcribed by the Chineſe ritual, or academy of compliments. There are determined the number of bows; the expreſſions to be employed; the genuflections; and the inclinations which are to be made to the right or left hand: the ſalutations of the maſter before the chair where the ſtranger is to be ſeated, for he ſalutes it moſt profoundly, and wipes the duſt away with the ſkirts of his robe; all theſe and other things are noticed, even to the ſilent geſtures, by which you are entreated to enter the houſe. The lower claſs of people are equally nice in theſe punctilios; and ambaſſadors paſs 40 days in practiſing them before they are enabled to appear at court. A tribunal of ceremonies has been erected, and every day very odd decrees are iſſued, to which the Chineſe moſt religiouſly ſubmit.

The marks of honour are frequently arbitrary; to be ſeated, with us, is a mark of repoſe and familiarity; to ſtand up, that of reſpect. There are countries, however, in which princes will only be addreſſed by perſons who are ſeated, and it is conſidered as a favour to be permitted to ſtand in their preſence. This cuſtom prevails in deſpotic countries: a deſpot cannot ſuffer without diſguſt the elevated figure of his ſubjects; he is pleaſed

Salute. pleaſed to bend their bodies with their genius: his preſence muſt lay thoſe who behold him proſtrate on the earth: he deſires no eagerneſs, no attention; he would only inſpire terror.

The pope makes no reverence to any mortal except the emperor, to whom he ſtoops a very little when he permits him to kiſs his lips.

SALUTE, in military matters, a diſcharge of artillery, or ſmall arms, or both, in honour of ſome perſon of extraordinary quality. The *colours* likewiſe ſalute royal perſons, and generals commanding in chief; which is done by lowering the point to the ground. In the field, when a regiment is to be reviewed by the king or his general, the drums beat a march as he paſſes along the line, and the officers ſalute one after another, bowing their half-pikes or ſwords to the ground; then recover and take off their hats. The enſigns ſalute altogether, by lowering their colours.

SALUTE, in the navy, a teſtimony of deference or homage rendered by the ſhips of one nation to another, or by ſhips of the ſame nation to a ſuperior or equal.

This ceremony is variouſly performed, according to the circumſtances, rank or ſituation, of the parties. It conſiſts in firing a certain number of cannon, or volleys of ſmall arms; in ſtriking the colours or top-ſails; or in one or more general ſhouts of the whole ſhip's crew, mounted on the maſts or rigging for that purpoſe.

The principal regulations with regard to ſalutes in the royal navy are as follow:

"When a flag-officer ſalutes the admiral and commander in chief of the fleet, he is to give him fifteen guns; but when captains ſalute him, they are to give him ſeventeen guns. The admiral and commander in chief of the fleet is to return two guns leſs to flag-officers and four leſs to captains. Flag-officers, ſaluting their ſuperior or ſenior officer, are to give him thirteen guns. Flag-officers are to return an equal number of guns to flag-officers bearing their flags on the ſame maſt, and two guns leſs to the reſt, as alſo to captains.

"When a captain ſalutes an admiral of the white or blue, he is to give him fifteen guns; but to vice and rear admirals, thirteen guns. When a flag-officer is ſaluted by two or more of his majeſty's ſhips, he is not to return the ſalute till all have finiſhed, and then to do it with ſuch a reaſonable number of guns as he ſhall judge proper.

"In caſe of the meeting of two ſquadrons, the two chiefs only are to exchange ſalutes. And if ſingle ſhips meet a ſquadron conſiſting of more than one flag, the principal flag only is to be ſaluted. No ſalutes ſhall be repeated by the ſame ſhips, unleſs there has been a ſeparation of ſix months at leaſt.

"None of his majeſty's ſhips of war, commanded only by captains, ſhall give or receive ſalutes from one another, in whatſoever part of the world they meet.

"A flag officer commanding in chief ſhall be ſaluted, upon his firſt hoiſting his flag, by all the ſhips preſent with ſuch a number of guns as is allowed by the firſt, third, or fifth articles.

"When any of his majeſty's ſhips ſhall meet with any ſhip or ſhips belonging to any foreign prince or ſtate, within his majeſty's ſeas (which extend to Cape Finiſterre), it is expected, that the ſaid foreign ſhips do ſtrike their top-ſail, and take in their flag, in acknowledgement of his majeſty's ſovereignty in theſe ſeas: and if any ſhall refuſe or offer to reſiſt, it is enjoined to all flag-officers and commanders to uſe their utmoſt endeavours to compel them thereto, and not ſuffer any diſhonour to be done to his majeſty. And if any of his majeſty's ſubjects ſhall ſo much forget their duty, as to omit ſtriking their top-ſail in paſſing by his majeſty's ſhips, the name of the ſhip and maſter, and from whence, and whither bound, together with affidavits of the fact, are to be ſent up to the ſecretary of the admiralty, in order to their being proceeded againſt in the admiralty court. And it is to be obſerved, that in his majeſty's ſeas, his majeſty's ſhip's are in no wiſe to ſtrike to any; and that in other parts, no ſhip of his majeſty's is to ſtrike her flag or top-ſail to any foreigner, unleſs ſuch foreign ſhip ſhall have firſt ſtruck, or at the ſame time ſtrike, her flag or top-ſail to his majeſty's ſhip. Salute.

"The flag-officers and commanders of his majeſty's ſhips are to be careful to maintain his majeſty's honour upon all occaſions, giving protection to his ſubjects, and endeavouring, what in them lies, to ſecure and encourage them in their lawful commerce; and they are not to injure, in any manner, the ſubjects of his majeſty's friends and allies.

"If a foreign admiral meets with any of his majeſty's ſhips, and ſalutes them, he ſhall receive gun for gun. If he be a vice-admiral, the admiral ſhall anſwer with two guns leſs. If a rear-admiral, the admiral and vice-admiral ſhall return two leſs. But if the ſhip be commanded by a captain only, the flag-officer ſhall give two guns leſs, and captains an equal number.

"When any of his majeſty's ſhips come to an anchor in a foreign port or road, within cannon-ſhot of its forts, the captain may ſalute the place with ſuch a number of guns as have been cuſtomary, upon good aſſurance of having the ſame number returned, but not otherwiſe. But if the ſhip bears a flag, the flag-officer ſhall firſt carefully inform himſelf how flags of like rank, belonging to other crowned heads, have given or returned ſalutes, and to inſiſt upon the ſame terms of reſpect.

"It is allowed to the commanders of his majeſty's ſhips in foreign parts, to ſalute the perſons of any admirals, commanders in chief, or captains of ſhips of war of foreign nations, and foreign noblemen, or ſtrangers of quality, as alſo the factories of the king's ſubjects, coming on board to viſit the ſhip; and the number of guns is left to the commander, as ſhall be ſuitable to the occaſion and the quality of the perſons viſiting; but he is nevertheleſs to remain accountable for any exceſſes in the abuſe of this liberty. If the ſhip viſited be in company with other ſhips of war, the captain is not to make uſe of the civilities allowed in the preceding articles but with leave and conſent of the commander in chief or the ſenior captain.

"Merchant-ſhips, whether foreigners or belonging to his majeſty's ſubjects, ſaluting the admiral of the fleet, ſhall be anſwered by ſix guns leſs; when they ſalute any other flag-ſhips, they ſhall be anſwered by four guns leſs; and if they ſalute men of war commanded by captains, they ſhall be anſwered by two guns leſs. If ſeveral merchant-ſhips ſalute in company, no return is to be made till all have finiſhed, and then by

Saluzzo ‖ Samaneans.

such a number of guns as shall be thought proper; but though the merchant ships should answer, there shall be no second return.——

"None of his majesty's ships of war shall salute any of his majesty's forts or castles in Great Britain or Ireland, on any pretence whatsoever."

SALUZZO, called by the French *Saluces*, a town and castle of Italy, in Piedmont, and capital of a marquisate of the same name, with a bishop's see. It is situated on an eminence at the foot of the Alps near the river Po, in E. Long. 18. 27. N. Lat. 44. 35. It is subject to the king of Sardinia.

SALUZZO, the marquisate of, a province of Piedmont in Italy, bounded on the north by Dauphiny and the province of the Four Valleys, on the east by those of Saviglano and Fossano, on the south by that of Cona and the county of Nice, and on the west by Barcelonetta. It was ceded to the duke of Savoy in 1601.

SAMA, a town and fort in the hands of the Dutch on the Gold Coast of Africa, stands on an eminence, the fort being watered by the pleasant river of St George, that discharges itself into the sea. The town contains above 200 houses, which seem to form three distinct villages, one of which is immediately under the cannon of the Dutch fort St Sebastian. Des Marchais deems this town to be one of the largest on the whole coast, Barbot likewise agreeing with him in its situation, extent, and number of inhabitants. The sole employment of the natives is fishing; a circumstance which easily accounts for their poverty. The government of this place is republican, the magistrates having the supreme power, being subject to periodical changes, and under the authority of the king of Gavi, who seldom however interferes in the affairs of the state. This prince resides some leagues distant from the sea, is rich, and much respected by his neighbours.

SAMANEANS, in antiquity, a kind of magi or philosophers, have been confounded by some with the Bramins. They proceeded from Ariana, a province of Persia, and the neighbouring countries, spread themselves in India, and taught new doctrines.

The Bramins, before their arrival, it is said, were in the highest period of their glory, were the only oracles of India, and their principal residence was on the banks of the Ganges, and in the adjacent mountains; while the Samaneans were settled towards the Indus. Others say, that the Bramins acquired all their knowledge from the Samaneans, before whose arrival it would be difficult to prove that the Bramins were the religious teachers of the Indians. The most celebrated and ancient of the Samanean doctors was Boutta, or Budda, who was born 683 years before Christ. His scholars paid him divine honours; and his doctrine, which consisted chiefly in the transmigration of souls, and in the worship of cows, was adopted not only in India, but also in Japan, China, Siam, and Tartary.. It was propagated, according to M. de Sainte Croix, in Thibet, in the 8th century, and succeeded there the ancient religion of Zamolxis. The Samaneans, or Buddists, were entirely destroyed in India by the jealous rage of the Bramins, whose absurd practices and fables they affected to treat with contempt; but several of their books are still preserved and respected on the coasts of Malabar.

We are told, too, that several of the Bramin orders have adopted their manner of living, and openly profess the greatest part of their doctrines. (*L'Ezour Vedam, ou Ancien Comment du Vedam*, published by M. de S. Croix, Paris 1779. See BRAMINS.

Samar ‖ Samaria.

SAMAR, a Spanish island not far from Manilla in the East Indies, is called *Samar* on the side which looks towards the other isles, and *Leitao* on that next the ocean. It is like the trunk of a man's body, without head or legs. Its greatest length, from Cape Baliquaton, which, with the point of Manilla, makes the strait of St Bernardino, in 13 degrees 30 minutes north latitude, extends to that of Guignan in 11 degrees towards the south. The other two points, making the greatest breadth of the island, are Cabo de Spirito Santo, or *Cape of the Holy Ghost*, the high mountains of which are the first discovered by ships from New Spain; and that which lying opposite to Leyte westward, makes another strait, scarce a stone's throw over. The whole compass of the island is about 130 leagues. Between Guignan and Cape Spirito Santo is the port of Borognon, and not far from thence those of Palapa and Catubig, and the little island of Bin, and the coast of Catarman. Vessels from countries not yet discovered are very frequently cast away on the before-mentioned coast of Palapa. Within the straits of St Bernardino, and beyond Baliquaton, is the coast of Samar, on which are the villages of Ibatan, Bangahon, Cathalogan, Paranos, and Calviga. Then follows the strait of St Juanillo, without which, standing eastward, appears the point and little island of Guignan, where the compass of the island ends. It is mountainous and craggy, but fruitful in the few plains there are. The fruits there are much the same as that of LEYTE; but there is one particular sort called by the Spaniards *chicoy*, and by the Chinese, who put a great value on it, *seyzu*, without kernels.

Modern Univ. Hist. vol. viii. p. 157.

SAMARA, in botany; a genus of the monogynia order, belonging to the tetandria class of plants. The calyx is quadripartite, the corolla tetrapetalous; the stamina immersed in the base of the petal; the stigma funnel-shaped.

SAMARCAND, or SARMACAND, an ancient and famous town of Asia, capital of the kingdom of the same name in the country of the Usbeck Tartars, with a castle and a famous university. The houses are built with stones, and it carries on a trade in excellent fruits. It is pleasantly seated near the river Sogde, a branch of the Amu, E. Long. 69. 0. N. Lat. 39. 50. This town was the capital of the kingdom of Sogdia in the time of Alexander the Great, when it was called *Maracanda*. It was afterwards the capital of the empire of Tamerlane the Great. In the time of Jenghiz Khan, it was forced to yield to the arms of that cruel conqueror; by whom the garrison amounting to 30,000 men, were butchered; 30,000 of the inhabitants with their wives and children, were presented to his generals; the rest were permitted to live in the city, on paying a tribute of 300,000 dinars or crowns of gold.

SAMARIA (anc. geog.) one of the three larger Cisjordan districts, situated in the middle between Galilee to the north and Judea to the south, beginning at the village Ginæa, in the Campus Magnus, and ending at the toparchy called *Acrobatena* (Josephus). Its soil

Samaria. foil differing in nothing from that of Judea; both equally hilly and champaign, both equally fertile in corn and fruit (id.) Called the *kingdom of Samaria in Ephraim* (Bible); comprising the ten tribes, and consequently all the country to the north of Judea and east and west of Jordan.

SAMARIA, the capital city of the kingdom of Samaria, or of the ten tribes. It was built by Omri king of Israel, who began to reign in the year of the world 3079, and died 3086 (1 Kings xvi. 24.) He bought the hill Samaria of Shemer for two talents of silver, or for the sum of L. 684:7:6. It took the name of *Samaria* from Shemer the owner of the hill; though some think there were already some beginnings of a city, because, before the reign of Omri, there is mention made of Samaria (1 Kings xiii. 32.) in the year of the world 3030. But others take this for a prolepsis, or an anticipation, in the discourse of the man of God, who speaks of Samaria under the reign of Jeroboam.

However this be, it is certain that Samaria was no considerable place, and did not become the capital city of the kingdom of Israel till after the reign of Omri. Before him, the kings of Israel dwelt at Shechem, or at Tirzah. Samaria was situated upon an agreeable and fruitful hill, and an advantageous situation, and was 12 miles from Dothaim, 12 from Merrom, and four from Atharoth. Josephus says, it was a day's journey from Jerusalem. Besides, though it was built upon an eminence, yet it must have water in abundance; since we find medals struck in this city, whereon is represented the goddess Astarte treading a river under foot; which proves it to have been well watered. And Josephus observes, that when it was taken by John Hircanus the prince of the Jews, he entirely demolished it, and caused even the brook to flow over its ruins, to obliterate all the footsteps of it.

The kings of Samaria omitted nothing to make this city the strongest, the finest, and the richest, that was possible. Ahab built there a palace of ivory (1 Kings xxii. 39), that is, in which there were many ornaments of ivory. Amos describes Samaria under Jeroboam II. as a city sunk into all excesses of luxury and effeminacy (Amos iii. 15. and iv. 1, 2).

Ben-hadad king of Syria built public places or streets in Samaria (1 Kings xx. 34.) probably for traffic, where his people dwelt to promote trade. His son Ben-hadad besieged this place under the reign of Ahab (1 Kings xx. 1, 2, 3, &c.) in the year of the world 3103.

The following year, Ben-hadad brought an army into the field, probably with a design to march against Samaria: but his army was again cut in pieces. Some years after this, Ben-hadad came a third time, lay down before Samaria, and reduced it to such necessities by famine, that a mother was there forced to eat her own child; but the city was relieved by a sensible effect of the protection of God.

Lastly, it was besieged by Shalmaneser king of Assyria, in the ninth year of Hoshea king of Israel (2 Kings xvii. 6, 7, &c.), which was the fourth of Hezekiah king of Judah. It was taken three years after, in the year of the world 3283. The prophet Hosea speaks of the cruelties exercised by Shalmaneser against the besieged (Hos. x. 4, 8, 9. xiv. 1); and Micah says, that this city was reduced to a heap of stones (Mic. i. 6.). The Cuthites that were sent by Esar-haddon to inhabit the country of Samaria, did not think it worth their while to repair the ruins of this city; they dwelt at Shechem, which they made the capital city of their state. They were still upon this footing when Alexander the Great came into Phœnicia and Judea. However, the Cuthites had rebuilt some of the houses of Samaria even from the time of the return from the captivity, since Ezra then speaks of the inhabitants of Samaria (Ezra iv. 17. Nehem. iv. 2.); and that the Samaritans, being jealous of the favours that Alexander the Great had conferred on the Jews, revolted from him while this prince was in Egypt, and burnt Andromachus alive, whom Alexander had left governor of Syria. Alexander marched against them, took Samaria, and put in Macedonians to inhabit it; giving the country round it to the Jews; and to encourage them to cultivate it, he granted them an exemption from tribute. The king of Egypt and Syria, who succeeded Alexander, deprived them of the property of this country. Samaritans.

But Alexander Balas king of Syria restored to Jonathan Maccabæus the cities of Lydda, Ephrem, and Ramatha, which he cut off from the country of Samaria (1 Mac. x. 30, 38, and xi. 28, 34.) Lastly, the Jews re-entered into the full possession of this whole country under John Hircanus the Asmonæan, who took Samaria, and ruined it in such a manner, according to Josephus, that he made the river run through its ruins. It continued in this condition to the year of the world 3947, when Aulus Gabinius, the proconsul of Syria, rebuilt it, and gave it the name of Gabiniana. But it was yet but very inconsiderable, till Herod the Great restored it to its ancient lustre, and gave it the Greek name of Sebaste, which in Latin is Augusta, in honour of the emperor Augustus, who had given him the property of this place.

The sacred authors of the New Testament speak but little of Samaria; and when they do mention it, it is rather in respect of the country about it, than of the city itself. (See Luke xvii. 11. John iv. 4, 5.)— It was there our Lord had the conversation with the woman of Samaria, that is, with a Samaritan woman of the city of Sychar. After the death of St Stephen, (Acts viii. 1, 2, 3.), when the disciples were dispersed through the cities of Judea and Samaria, St Philip the deacon withdrew into the city of Samaria, where he made several converts. When the apostles heard that this city had received the word of God, they sent Peter and John thither, to communicate the Holy Ghost to such as had been baptized. It was there they found Simon Magus, who offered money to the apostles, being in hopes to buy this power of communicating the Holy Ghost. Samaria is never called Sebaste in the books of the New Testament, though strangers have known it but by this name. St Jerome says, that it was thought Obadiah was buried at Samaria. They also showed there the tombs of Elisha and of St John the Baptist. There are found many ancient medals that were struck at Sebaste, or Samaria, and some bishops of this city have subscribed to the ancient councils.

SAMARITANS. We have already spoken of the Samaritans [illegible]

Samaritans. are the people of the city of Samaria, and the inhabitants of the province of which Samaria was the capital city. In this ſenſe, it ſhould ſeem that we might give the name of Samaritans to the Iſraelites of the ten tribes, who lived in the city and territory of Samaria. However, the ſacred authors commonly give the name of Samaritans only to thoſe ſtrange people whom the kings of Aſſyria ſent from beyond the Euphrates to inhabit the kingdom of Samaria, when they took away captive the Iſraelites that were there before. Thus we may fix the epoch of the Samaritans at the taking of Samaria by Salmaneſer, in the year of the world 3283. This prince carried away captive the Iſraelites that he found in the country, and aſſigned them dwellings beyond the Euphrates, and in Aſſyria, (2 Kings xvii. 24.) He ſent other inhabitants in their ſtead, of which the moſt conſiderable were the Cuthites, a people deſcended from Cuſh, and who are probably of the number of thoſe whom the ancients knew by the name of Scythians.

After Salmaneſer, his ſucceſſor Eſar-haddon was informed, that the people which had been ſent to Samaria were infeſted by lions that devoured them, (2 Kings xvii. 25.); this he imputed to the ignorance of the people in the manner of worſhipping the god of the country. Wherefore Eſar-haddon ſent a prieſt of the God of Iſrael that he might teach them the religion of the Hebrews. But they thought they might blend this religion with that which they profeſſed before; ſo they continued to worſhip their idols as before, in conjunction with the God of Iſrael, not perceiving how abſurd and incompatible theſe two religions were.

It is not known how long they continued in this ſtate; but at the return from the captivity of Babylon, it appears they had entirely quitted the worſhip of their idols; and when they aſked permiſſion of the Iſraelites that they might labour with them at the rebuilding of the temple of Jeruſalem, they affirmed, that from the time that Eſar-haddon had brought them into this country they had always worſhipped the Lord, (Ezrah iv. 1, 2, 3.) And indeed, after the return from the captivity, the ſcripture does not any where reproach them with idolatrous worſhip, though it does not diſſemble either their jealouſy againſt the Jews, nor the ill offices they had done them at the court of Perſia, by their ſlanders and calumnies, or the ſtratagems they contrived to hinder the repairing of the walls of Jeruſalem.—(Nehem. ii. 10, 19. iv. 2, &c. vi. 1, 2, &c.)

It does not appear that there was any temple in Samaria, in common to all thoſe people who came thither from beyond the Euphrates, before the coming of Alexander the Great into Judea. Before that time, every one was left to his own diſcretion, and worſhipped the Lord where he thought fit. But they preſently comprehended, from the books of Moſes which they had in their hands, and from the example of the Jews their neighbours, that God was to be worſhipped in that place only which he had choſen. So that ſince they could not go to the temple of Jeruſalem, which the Jews would not allow of, they bethought themſelves of building a temple of their own upon mount Gerizim, near the city of Shechem, which was then their capital. Therefore Sanballat, the governor of the Samaritans, applied himſelf to Alexander, and told him he had a ſon in-law, called Manaſſes, ſon to Jaddus the high-prieſt of the Jews, who had retired to Samaria Samaritans. with a great number of other perſons of his own nation; that he deſired to build a temple in this province, where he might exerciſe the high-prieſthood; that this undertaking would be to the advantage of the king's affairs, becauſe in building a temple in the province of Samaria, the nation of the Jews would be divided, who are a turbulent and ſeditious people, and by ſuch a diviſion would be made weaker, and leſs in a condition to undertake new enterprizes.

Alexander readily conſented to what Sanballat deſired, and the Samaritans preſently began their building of the temple of Gerizim, which from that time they have always frequented, and ſtill frequent to this day, as the place where the Lord intended to receive the adoration of his people. It is of this mountain, and of this temple that the Samaritan woman of Sychar ſpoke to our Saviour, (John iv. 20.) See GERIZIM.

The Samaritans did not long continue under the obedience of Alexander. They revolted from him the very next year, and Alexander drove them out of Samaria, put Macedonians in their room, and gave the province of Samaria to the Jews. This preference that Alexander gave to the Iſraelites contributed not a little to increaſe that hatred and animoſity that had already obtained between theſe two people. When any Iſraelite had deſerved puniſhment for the violation of ſome important point of the law, he preſently took refuge in Samaria or Shechem, and embraced the way of worſhip according to the temple of Gerizim. When the Jews were in a proſperous condition, and affairs were favourable to them, the Samaritans did not fail to call themſelves Hebrews, and pretended to be of the race of Abraham. But no ſooner were the Jews fallen into diſcredit or perſecution, but the Samaritans immediately diſowned them, would have nothing in common with them, acknowledged themſelves to be Phœnicians originally, or that they were deſcended from Joſeph and Manaſſeh his ſon. This uſed to be their practice in the time of Antiochus Epiphanes.

The Samaritans, having received the Pentateuch, or the five books of Moſes, from the prieſt that was ſent by Eſar-haddon, have preſerved it to this day, in the ſame language and character it was then, that is, in the old Hebrew or Phœnician character, which we now call the Samaritan, to diſtinguiſh it from the modern Hebrew character, which at preſent we find in the books of the Jews. Theſe laſt, after their captivity, changed their old characters, and took up thoſe of the Chaldee, which they had been uſed to at Babylon, and which they continue ſtill to uſe. It is wrong, ſays F. Calmet, to give this the name of the Hebrew character, for that can be ſaid properly only of the Samaritan text. The critics have taken notice of ſome variations between the Pentateuch of the Jews and that of the Samaritans; but theſe varieties of reading chiefly regard the word Gerizim, which the Samaritans ſeem to have purpoſely introduced to favour their pretenſions, that Mount Gerizim was the place in which the Lord was to be adored. The other various readings are of ſmall importance.

The religion of this people was at firſt the Pagan. Every one worſhipped the deity he had been uſed to in his own country (2 Kings xvii. 25, 30, 31.)

The

Samaritans. The Babylonians worſhipped Succoth-benoth; the Cuthites, Nergal; the Hamathites, Aſhima; the Avites, Nibhaz and Tartak; the Sepharvites, Adrammelech and Anammelech. If we would enumerate all the names of falſe gods to whom the Samaritans have paid a ſacrilegious worſhip, we ſhould have enough to do. This matter is ſufficiently perplexed, by reaſon of the different names by which they were adored by different nations, inſomuch that it would be almoſt impoſſible to clear up this affair. See SUCCOTH-BENOTH, &c. Afterwards, to this profane worſhip the Samaritans added that of the Lord, the God of Iſrael, (2 Kings xvii. 29, 30, 31, 32.) They gave a proof of their little regard to this worſhip of the true God, when under Antiochus Epiphanes they conſecrated their temple at Gerizim to Jupiter Argivus. In the time of Alexander the Great, they celebrated the ſabbatical year, and conſequently the year of jubilee alſo. We do not know whether they did it exactly at the ſame time with the Jews, or whether they obſerved any other epoch; and it is to little purpoſe that ſome critics have attempted to aſcertain the firſt beginning of it. Under the kings of Syria they followed the epoch of the Greeks, or that of the Seleucidæ, as other people did that were under the government of the Seleucidæ. After that Herod had re-eſtabliſhed Samaria, and had given it the name of Sebaſte, the inhabitants of this city, in their medals, and all public acts, took the date of this new eſtabliſhment. But the inhabitants of Samaria, of which the greater part were Pagans or Jews, were no rule to the other Samaritans, who probably reckoned their years according to the reigns of the emperors they were ſubject to, till the time they fell under the jurisdiction of the Mahometans, under which they live at this day; and they reckon their year by the Hegira, or, as they ſpeak, according to the reign of Iſhmael, or the Iſmaelites. Such of our readers as deſire to be further acquainted with the hiſtory of the ancient Samaritans, we refer to the works of Joſephus, where they will find that ſubject largely treated of.

As to their belief, it is objected to them, that they receive only the Pentateuch, and reject all the other books of ſcripture, chiefly the prophets, who have more expreſsly declared the coming of the Meſſiah.—They have alſo been accuſed of believing God to be corporeal, of denying the Holy Ghoſt, and the reſurrection of the dead. Jeſus Chriſt reproaches them (John iv. 22.) with worſhiping they know not what; and in the place already referred to he ſeems to exclude them from ſalvation, when he ſays, that "Salvation is of the Jews." True it is, that theſe words might only ſignify, that the Meſſiah was to proceed from the Jews; but the crime of ſchiſm alone, and a ſeparation from the true church, was ſufficient to exclude them from ſalvation. The Samaritan woman is a ſufficient teſtimony that the Samaritans expected a Meſſiah, who they hoped would clear up all their doubts (John. iv. 25.) Several of the inhabitants of Shechem believed at the preaching of Jeſus Chriſt, and ſeveral of Samaria believed at that of St Philip; but it is ſaid, they ſoon fell back to their former errors, being perverted by Simon Magus.

The Samaritans at preſent are very few in number. Joſeph Scaliger, being curious to know their ſtages, wrote to the Samaritans of Egypt, and to the high-prieſt of the whole ſect who reſided at Neapolis in Syria. They returned two anſwers to Scaliger, dated in the year of the Hegira 998. Theſe were preſerved in the French king's library, and were tranſlated into Latin by father Morin, and printed in England in the collection of that father's letters, in 1682, under the title of *Antiquitates Eccleſiæ Orientalis*. By theſe letters it appears, that they believe in God, in his ſervant Moſes, the holy law, the mountain Gerizim, the houſe of God, the day of vengeance and of peace; that they value themſelves upon obſerving the law of Moſes in many points more rigidly than the Jews themſelves.—They keep the ſabbath with the utmoſt ſtrictneſs required by the law, without ſtirring from the place they are in, but only to the ſynagogue. They go not out of the city, and abſtain from their wives on that day. They never delay circumciſion beyond the eighth day. They ſtill ſacrifice to this day in the temple on mount Gerizim, and give to the prieſt what is enjoined by the law. They do not marry their own nieces, as the Jews do, nor do they allow themſelves a plurality of wives. Their hatred for the Jews may be ſeen through all the hiſtory of Joſephus, and in ſeveral places of the New Teſtament. The Jewiſh hiſtorian informs us that under the government of Coponius, one paſſover night, when they opened the gates of the temple, ſome Samaritans had ſcattered the bones of dead men there, to inſult the Jews, and to interrupt the devotion of the feſtival. The evangeliſts ſhow us, that the Jews and Samaritans held no correſpondence together (John iv. 9.) "The Jews have no dealings with the Samaritans." And the Samaritan woman of Sychar was much ſurpriſed that Jeſus talked with her, and aſked drink of her, being a Samaritan. When our Saviour ſent his apoſtles to preach in Judea, he forbad them to enter into the Samaritan cities, (Matt. x. 5.); becauſe he looked upon them as ſchiſmatics, and as ſtrangers to the covenant of Iſrael. One day when he ſent his diſciples to provide him a lodging in one of the cities of the Samaritans, they would not entertain him, becauſe they perceived he was going to Jeruſalem. (Luke ix. 52. 53.) "Becauſe his face was as though he would go to Jeruſalem." And when the Jews were provoked at the reproaches of Jeſus Chriſt, they told him he was a Samaritan (John viii. 48.), thinking they could ſay nothing more ſevere againſt him. Joſephus relates, that ſome Samaritans having killed ſeveral Jews as they were going to the feaſt at Jeruſalem, this occaſioned a kind of a war between them. The Samaritans continued their fealty to the Romans, when the Jews revolted from them; yet they did not eſcape from being involved in ſome of the calamities of their neighbours.

Samaritans.

There are ſtill at this day ſome Samaritans at Shechem, otherwiſe called Naplouſe. They have prieſts there, who ſay they are of the family of Aaron. They have a high-prieſt, who reſides at Shechem, or at Gerizim, who offers ſacrifices there, and who declares the feaſt of the paſſover, and all the other feaſts, to all the diſperſed Samaritans. Some of them are to be found at Gaza, ſome at Damaſcus, and ſome at Grand Cairo.

SAMBUCUS, ELDER, in botany: A genus of the trigynia order, belonging to the pentandria claſs of plants; and in the natural method ranking under the

Samaneus ‖ Samiels.

43d order, *Dumoſæ*. The calyx is quinquepartite; the corolla quinquefid; the berry triſpermous.

The moſt remarkable ſpecies are, 1. The nigra, or common black elder-tree, riſes with a tree-like ſtem, branching numerouſly into a large ſpreading head, twenty or thirty feet high; pinnated leaves, of two or three pair of oval lobes and an odd one; and large five parted umbels of white flowers towards the ends of the branches, ſucceeded by bunches of black and other different coloured berries, in the varieties; which are—Common black-berried elder-tree—White-berried elder—Green-berried elder—Laciniated, or parſley-leaved elder, having the folioles much laciniated, ſo as to reſemble parſley leaves—Gold-ſtriped-leaved elder—Silver-ſtriped elder—Silver-duſted elder. 2. The racemoſa, racemoſe red-berried elder, riſes with a tree-like ſtem, branching ten or twelve feet high, having reddiſh-brown branches and buds; pinnated leaves of ſix or ſeven oval deeply-ſawed lobes; and compound, oval, racemous, cluſters of whitiſh-green flowers, ſucceeded by oval cluſters of red berries. This is a reſident of the mountainous parts of the ſouth of Europe, and is retained in our gardens as a flowering ſhrub, having a peculiar ſingularity in its oval-cluſtered flowers and berries. 3. The Canadenſis, or Canada ſhrubby elder, riſes with a ſhrubby ſtem, branching eight or ten feet high, having reddiſh ſhoots; ſomewhat bipinnated leaves, often ternate below, the other compoſed of five, ſeven, or nine oval lobes; and towards the ends of the branches, cymoſe quinquepartite umbels of flowers, ſucceeded by blackiſh red berries. All the ſorts of elder are of the deciduous tribe, very hardy, and grow freely anywhere; are generally free ſhooters, but particularly the common elder, and varieties, which make remarkably ſtrong, jointed ſhoots, of ſeveral feet in length, in one ſeaſon; and they flower moſtly in ſummer, except the racemoſe elder, which generally begins flowering in April; and the branches being large, ſpreading, and very abundant, are exceedingly conſpicuous; but they emit a moſt diſagreeable odour. The flowers are ſucceeded in the moſt of the ſorts by large bunches of ripe berries in autumn, which, although very unpalatable to eat, are in high eſtimation for making that well known cordial liquor called *elder wine*, particularly the common black-berried elder. The merit of the elder in gardening may be both for uſe and ornament, eſpecially in large grounds.

SAMIAN EARTH, in the materia medica, the name of two ſpecies of marl uſed in medicine, viz. 1. The white kind, called by the ancients *collyrium ſamium*, being aſtringent, and therefore good in diarrhœs, dyſenteries, and hæmorrhagies: they alſo uſed it externally in inflammations of all kinds. 2. The browniſh white kind, called *aſtar ſamias* by Dioſcorides; this alſo ſtands recommended as an aſtringent.

SAMIELS, the Arabian name of a hot wind peculiar to the deſert of Arabia. It blows over the deſert in the months of July and Auguſt from the north-weſt quarter, and ſometimes it continues with all its violence to the very gates of *Bagdad*, but never affects any body within the walls. Some years it does not blow at all, and in others it appears ſix, eight, or ten times, but ſeldom continues more than a few minutes at a time. It often paſſes with the apparent quickneſs of lightning. The Arabians and Perſians, who are acquainted with the appearance of the ſky at or near the time this wind ariſeth, have warning of its approach by a thick haze, which appears like a cloud of duſt ariſing out of the horizon; and they immediately upon this appearance throw themſelves with their faces to the ground, and continue in that poſition till the wind is paſſed, which frequently happens almoſt inſtantaneouſly; but if, on the contrary they are not careful or briſk enough to take this precaution, which is ſometimes the caſe, and they get the full force of the wind, it is inſtant death.

Samiels ‖ Samoieda.

Ives's Voyage from England to India in 1754.

The above method is the only one which they take to avoid the effects of this fatal blaſt; and when it is over, they get up and look round them for their companions; and if they ſee any one lying motionleſs, they take hold of an arm or leg, and pull and jerk it with ſome force; and if the limb thus agitated ſeparates from the body, it is a certain ſign that the wind has had its full effect; but if, on the contrary, the arm or leg does not come away, it is a ſure ſign there is life remaining, although to every outward appearance the perſon is dead; and in that caſe they immediately cover him or them with clothes, and adminiſter ſome warm diluting liquor to cauſe a perſpiration, which is certainly but ſlowly brought about.

The Arabs themſelves can ſay little or nothing about the nature of this wind, only that it always leaves behind it a very ſtrong ſulphureous ſmell, and that the air at theſe times is quite clear, except about the horizon, in the north-weſt quarter, before obſerved, which gives warning of its approach. We have not been able to learn whether the dead bodies are ſcorched, or diſſolved into a kind of gelatinous ſubſtance; but from the ſtories current about them, there has been frequent reaſon to believe the latter; and in that caſe ſuch fatal effects may be attributed rather to a noxious vapour than to an abſolute and exceſſive heat. The ſtory of its going to the gates of Bagdad and no farther may be reaſonably enough accounted for, if the effects are attributed to a poiſonous vapour, and not an exceſſive heat. The abovementioned wind, Samiel, is ſo well known in the neighbourhood of Bagdad and Baſſora, that the very children ſpeak of it with dread.

SAMOGITIA, a province of Poland, bounded on the north by Courland, on the eaſt by Lithuania, on the weſt by the Baltic Sea, and on the ſouth by Regal Pruſſia, being about 175 miles in length and 125 in breadth. It is full of foreſts and very high mountains, which feed a great number of cattle, and produce a large quantity of honey. There are alſo very active horſes, in high eſteem. The inhabitants are clowniſh, but honeſt; and they will not allow a young woman to go out in the night without a candle in her hand and two bells at her girdle. Roſſenna and Wormia are the principal places.

SAMOIEDA, a country of the Ruſſian empire, between Aſiatic Tartary and Archangel, lying along the ſea-coaſt as far as Siberia. The inhabitants are ſo rude a people that they can hardly pretend to humanity, except in their face and figure: they have little underſtanding, and in many things reſemble brutes, for they will eat carrion of every kind. They travel on the ſnow on ſledges, drawn with an animal like a reindeer, but with the horns of a ſtag. Thoſe who have ſeen them affirm, that no people on the earth make ſuch ſhocking figures: their ſtature is ſhort; their ſhoulders and

Samolus ‖ Sampan.

and faces are broad, with flat broad noſes, great blubber hanging lips, and ſtaring eyes; their complexion is dark, their hair long and as black as pitch, and they have very little beards; and it is ſaid that all the Samoid women have black nipples. If they have any religion at all, it is idolatry, though there has been ſome attempts of late to convert them. Their huts are made of birch bark ſewed together, which is laid upon ſtakes fix'd in the ground, and at the top is a hole to let out the ſmoke; the fire is made in the middle, and both men and women lie naked round them all night.—They have little regard to the nearneſs of kin, and take as many wives as they can keep: their only employment is hunting and fiſhing.

SAMOLUS, in botany: A genus of the monogynia order, belonging to the pentrandria claſs of plants; and in the natural method ranking under the 21ſt order, *Precie*. The corolla is ſalver-ſhaped, the ſtamina ſurrounded by ſmall ſcales at its throat. The capſule is unilocular inferior.

SAMOS (anc. geog.), an iſland at no great diſtance from the promontory Mycale, on the continent of the Hither Aſia, and oppoſite to Epheſus; the diſtance only ſeven ſtadia (Strabo); a free iſland, in compaſs 87 miles (Pliny); or 100 (Iſidorus): with a cognominal town (Ptolemy, Horace); famous for the worſhip and a temple of Juno, with a noted aſylum (Virgil, Strabo, Tacitus); and hence their coin exhibited a peacock (Athenæus): The country of Pythagoras, who, to avoid the oppreſſion of tyrants, retired to Italy, the land of freedom. Samos, though not ſo happy in producing wine, which Strabo wonders at, all the adjoining iſlands yielding a generous ſort, yet abounds in all the neceſſaries of life. The *Vaſa Samaia*, among earthen ware, were held in high repute. *Samii*, the people (Ovid).—The iſland is now in the hands of the Turks. It is about 32 miles in length, and 22 in breadth, and extremely fertile. The inhabitants live at their eaſe, their taxation by the Turks being moderate. The women are very naſty and ugly, and they never ſhift above once a month. They are cloathed in the Turkiſh manner, except a red coif, and their hair hanging down their backs, with plates of ſilver or block-tin faſtened to the ends.—They have abundance of melons, lentils, kidney-beans, and excellent muſkadine grapes. They have white figs four times as big as the common ſort, but not ſo well taſted. Their ſilk is very fine, and their honey and wax admirable; beſides which, their poultry are excellent: they have iron mines, and moſt of the ſoil is of a ruſty colour: they have alſo emery ſtone, and all the mountains are of white marble. The inhabitants are about 12,000 who are almoſt all Greeks; and the monks and prieſts occupy moſt part of the iſland. They have a biſhop who reſides at Cora. See POLYCRATES.

Oſbec's Voyage to China and the Eaſt Indies.

SAMPAN, is a Chineſe boat without a keel, looking almoſt like a trough; they are made of different dimenſions, but are moſtly covered. Theſe boats are as long as ſloops, but broader, almoſt like a baking trough; and have at the end one or more decks of bamboo ſticks: the cover or roof is made of bamboo ſticks, arched over in the ſhape of a grate; and may be raiſed or lowered at pleaſure: the ſides are made of boards, with little holes, with ſhutters inſtead of windows: the boards are faſtened on both ſides to [illegible], which have notches like ſteps on the inſides, that the roof may be let down, and reſt on them: on both ends of the deck are commonly two little doors, at leaſt there is one at the hindmoſt end. A fine white ſmooth carpet ſpread up as far as the boards makes the floor, which in the middle conſiſts of loſe boards: but this carpet is only made uſe of to ſleep on. As their boats greatly differ from ours in ſhape, they are likewiſe rowed in a different manner: for two rowers, poſting themſelves at the back end of the ſampan, work it forwards very readily by the motion of two oars; and can almoſt turn the veſſel juſt as they pleaſe: the oars, which are covered with a little hollow quadrangular iron, are laid on iron ſwivels, which are faſtened in the ſides of the ſampan: at the iron the oars are pieced, which makes them look a little bent: in common, a rower ſits before with a ſhort oar; but this he is forced to lay aſide when he comes near the city, on account of the great throng of ſampans; and this inconvenience has confirmed the Chineſe in their old way of rowing. Inſtead of pitch, they make uſe of a cement like our putty, which we call *chinam*, but the Chineſe call it *kiang*. Some authors ſay that this cement is made of lime and a reſin exuding from the tree *tung yeu*, and bamboo ockam.

Beſides a couple of chairs, they have the following furniture: two oblong tables or boards on which ſome Chineſe characters are drawn; a lanthorn for the night-time, and a pot to boil rice in. They have alſo a little cover for their houſehold god, decorated with gilt paper and other ornaments: before him ſtands a pot filled with aſhes, into which the tapers are put before the idol. The candles are nothing elſe than bamboo chips, to the upper end of which ſaw-duſt of ſandal-wood is ſtuck on with gum. Theſe tapers are everywhere lighted before the idols in the pagodas, and before the doors in the ſtreets; and, in large cities, occaſion a ſmoke very pernicious to the eyes. Before this idol ſtands ſome *ſamſo*, or Chineſe brandy, water, &c. We ought to try whether the Chineſe would not like to uſe juniper-wood inſtead of ſandal-wood; which latter comes from Suratte, and has almoſt the ſame ſmell with juniper.

SAMSON, one of the judges of Iſrael, memorable for his ſupernatural ſtrength, his victories over the Philiſtines, and his tragical end, as related in the book of *Judges*.

Samson's Poſt, a ſort of pillar erected in a ſhip's hold, between the lower deck and the kelſon, under the edge of a hatchway, and furniſhed with ſeveral notches that ſerve as ſteps to mount or deſcend, as occaſion requires. This poſt being firmly driven into its place, not only ſerves to ſupport the beam and fortify the veſſel in that place, but alſo to prevent the cargo or materials contained in the hold, from ſhifting to the oppoſite ſide, by the rolling of the ſhip in a turbulent or heavy ſea.

Books of SAMUEL, two canonical books of the Old Teſtament, as being uſually aſcribed to the prophet Samuel.

The books of Samuel and the books of Kings are a continued hiſtory of the reigns of the kings of Iſrael and Judah, for which reaſon the books of Samuel are likewiſe ſtyled *the firſt and ſecond books of Kings*. But

Samyda, Sana.

the firſt 24 chapters contain all that relates to the Hiſtory of Samuel, and the latter part of the firſt book and all the ſecond include the relation of events that happened after the death of that prophet, it has been ſuppoſed that Samuel was author only of the firſt 24 chapters, and that the prophets Gad and Nathan finiſhed the work. The firſt book of Samuel comprehends the tranſactions under the government of Eli and Samuel, and under Saul the firſt king; and alſo the acts of David while he lived under Saul; and is ſuppoſed to contain the ſpace of 101 years. The ſecond book contains the hiſtory of about 40 years, and is wholly ſpent in relating the tranſactions of David's reign.

SAMYDA, in botany: A genus of the monogynia order, belonging to the decandria claſs of plants; and in the natural method ranking with thoſe of which the order is doubtful. The calyx is quinquepartite and coloured; there is no corolla; the capſule in the inſide reſembles a berry, is trivalved and unilocular; the ſeeds neſtling.

Niebuhr's Travels by Heron.

SANA, or SANAA, a large, populous, and handſome town of Aſia, capital of Arabia Felix, is ſituated in Proper Yemen, at the foot of mount Nikkum, on which are ſtill to be ſeen the ruins of a caſtle, which the Arabs ſuppoſe to have been built by Shem. Near this mountain ſtands the caſtle; a rivulet runs upon the other ſide; and near it is the Buſtan el Metwokkel, a ſpacious garden, which was laid out by Imam Metwokkel, and has been embelliſhed with a fine garden by the reigning Imam. The walls of the city, which are built of bricks, exclude this garden, which is incloſed within a wall of its own. The city, properly ſo called, is not very extenſive: one may walk round it all in an hour. The city gates are ſeven. Here are a number of moſques, ſome of which have been built by Turkiſh pachas. Sana has the appearance of being more populous that it actually is; for the gardens occupy a part of the ſpace within the walls. In Sana are only 12 public baths; but many noble palaces, three of the moſt ſplendid of which have been built by the reigning Imam. The palace of the late Imam El Manzor, with ſome others, belong to the royal family, who are very numerous.

The Arabian palaces are built in a ſtyle of architecture different from ours. The materials are, however, burnt bricks, and ſometimes even hewn ſtones; but the houſes of the common people are of bricks which have been dried in the ſun. There are no glaſs windows, except in one palace, near the citadel. The reſt of the houſes have, inſtead of windows, merely ſhutters, which are opened in fair weather, and ſhut when it is foul. In the laſt caſe, the houſe is lighted by a round wicket, fitted with a piece of Muſcovy glaſs; ſome of the Arabians uſe ſmall panes of ſtained glaſs from Venice

At Sana, and in the other cities of the Eaſt, are great ſimſeras or caravanſeras for merchants and travellers. Each different commodity is ſold in a ſeparate market. In the market for bread, none but women are to be ſeen; and their little ſhops are portable. The ſeveral claſſes of mechanics work, in the ſame manner, in particular quarters in the open ſtreet. Writers go about with their deſks, and make out brieves, copybooks, and inſtruct ſcholars in the art of writing, all at the ſame time. There is one market where old clothes are taken in exchange for new. Sana, Sanadon.

Wood for the carpenter's purpoſe is extremely dear through Yemen; and wood for the fire at Sana is no leſs ſo. All the hills near the city are bleak and bare, and wood is therefore to be brought hither from the diſtance of three days journey; and a camel's burthen commonly coſts two crowns. This ſcarcity of wood is particularly ſupplied by the uſe of a little pit-coal. Peats are burnt here; but they are ſo bad, that ſtraw muſt be intermixed to make them burn.

Fruits are, however, very plenteous at Sana. Here are more than 20 different ſpecies of grapes, which, as they do not all ripen at the ſame time, continue to afford a delicious refreſhment for ſeveral months. The Arabs likewiſe preſerve grapes, by hanging them up in their cellars, and eat them almoſt through the whole year. The Jews make a little wine, and might make more if the Arabs were not ſuch enemies to ſtrong liquors. A Jew convicted of conveying wine into an Arab's houſe is ſeverely puniſhed; nay, the Jews muſt even uſe great caution in buying and ſelling it among themſelves. Great quantities of grapes are dried here; and the exportation of raiſins from Sana is conſiderable. One ſort of theſe grapes are without ſtones, and contains only a ſoft grain, the preſence of which is not perceptible in eating the raiſin.

In the caſtle, which ſtands on a hill, are two palaces. "I ſaw (ſays Niebuhr) about it ſome ruins of old buildings, but, notwithſtanding the antiquity of the place, no remarkable inſcriptions. There is the mint, and a range of priſons for perſons of different ranks. The reigning Imam reſides in the city; but ſeveral princes of the blood-royal live in the caſtle. The battery is the moſt elevated place about theſe buildings; and there I met with what I had no expectation of, a German mortar, with this inſcription, *Jorg Selos Goſmick*, 1513. I ſaw alſo upon the ſame battery ſeven iron cannons, partly buried in the ſand, and partly ſet upon broken carriages. Theſe ſeven ſmall cannons, with ſix others near the gates, which are fired to announce the return of the different feſtivals, are all the artillery of the capital of Yemen."

SANADON (Noel Etienne), a Jeſuit, was born at Rouen in 1676, and was a diſtinguiſhed profeſſor of humanity at Caen. He there became acquainted with Huet biſhop of Avranches, whoſe taſte for literature and poetry was ſimilar to his own. Sanadon afterwards taught rhetoric at the univerſity of Paris, and was entruſted with the education of the prince of Conti, after the death of Du Morceau. In 1728 he was made librarian to Louis XIV. an office which he retained to his death. He died on the 21ſt September 1733, in the 58th year of his age.

His works are, 1. Latin Poems, in 12mo, 1715, and reprinted by Barbou, in 8vo, 1754. His ſtyle poſſeſſes the graces of the Auguſtan age. His language is pure and nervous; his verſes are harmonious, and his thoughts are delicate and well choſen; but ſometimes his imagination flags. His Latin poems conſiſt of Odes, Elegies, Epigrams, and others, on various ſubjects. 2. A tranſlation of Horace, with Remarks, in 2 vols 4to, printed at Paris in 1727; but the beſt edition of this work was printed at Amſterdam in 1735, in 8 vols 12mo, in which are alſo inſerted the

Sanballat, Sanchez.

verſions and notes of M. Dacier. Sanadon tranſlated with elegance and taſte; but he has not preſerved the ſublimity of the original in the odes, nor the energy and preciſion in the epiſtles and ſatires. In general, his verſion is rather a paraphraſe than a faithful tranſlation. Learned men have juſtly cenſured him for the liberty which he has taken in making conſiderable changes in the order and ſtructure of the odes. He has alſo given offence by his uncouth orthography. 3. A Collection of Diſcourſes delivered at different times, which affords ſtrong proofs of his knowledge of oratory and poetry. 4. A book entitled *Prieres et Inſtructions Chretiennes*.

SANBALLAT, the chief or governor of the Cuthites or Samaritans, was always a great enemy to the Jews. He was a native of Horon, or Horoniam, a city beyond Jordan, in the country of the Moabites. He lived in the time of Nehemiah, who was his great opponent, and from whoſe book we learn his hiſtory. There is one circumſtance related of him which has occaſioned ſome diſpute among the learned; and the ſtate of the queſtion is as follows: When Alexander the Great came into Phœnicia, and ſat down before the city of Tyre, Sanballat quitted the intereſts of Darius king of Perſia, and went at the head of 8000 men to offer his ſervice to Alexander. This prince readily entertained him, and being much ſolicited by him, gave him leave to erect a temple upon mount Gerizim, where he conſtituted his ſon-in-law Manaſſeh the high-prieſt. But this ſtory carries a flagrant anachroniſm: for 120 years before this, that is, in the year of the world 3550, Sanballat was governor of Samaria; wherefore the learned Dr Prideaux (in his Connection of the Hiſtories of the Old and New Teſtament) ſuppoſes two Sanballats, and endeavours to reconcile it to truth and probability, by ſhowing it to be a miſtake of Joſephus. This author makes Sanballat to flouriſh in the time of Darius Codomannus, and to build his temple upon mount Gerizim by licence from Alexander the Great; whereas it was performed by leave from Darius Nothus, in the 15th year of his reign. This takes away the difficulty ariſing from the great age of Sanballat, and brings him to be contemporary with Nehemiah, as the Scripture hiſtory requires.

SANCHEZ (François), called in Latin *Sanctius*, was of Las Brocas in Spain, and has been dignified by his own countrymen with the pompous titles of *le Pere de la Langue Latine, et le Docteur de tous les Gens-de-lettres*. He wrote, 1. An excellent treatiſe intitled Minerva, or *de Cauſis Linguæ Latinæ*, which was publiſhed at Amſterdam in 1714, in 8vo. The authors of the *Portroyal Methode de la Langue Latine* have been much indebted to this work. 2. The Art of Speaking, and the Method of tranſlating Authors. 3. Several other learned pieces on grammar. He died in the year 1600, in his 77th year.

Sanchez-the.

We muſt be careful to diſtinguiſh him from another *François Sanchez*, who died at Toulouſe in 1632. This laſt was a Portugueſe phyſician who ſettled at Toulouſe, and, though a Chriſtian, was born of Jewiſh parents. He is ſaid to have been a man of genius and a philoſopher. His works have been collected under the title of *Opera Medica. His junctis ſunt tractatus quidam philoſophici non infabiles*. They were printed at Toulouſe in 1636.

SANCHONIATHO, a Phenician philoſopher and hiſtorian, who is ſaid to have flouriſhed before the Trojan war about the time of Semiramis. Of this moſt ancient writer, the only remains extant are ſundry fragments of cosmogony, and of the hiſtory of the gods and firſt mortals, preſerved by Euſebius and Theodoret: both of whom ſpeak of Sanchoniatho as an accurate and faithful hiſtorian; and the former adds, that his work, which was tranſlated by Philo-Biblius from the Phenician into the Greek language, contains many things relating to the hiſtory of the Jews which deſerve great credit, both becauſe they agree with the Jewiſh writers, and becauſe the author received theſe particulars from the annals of Hierombalus, a prieſt of the god Jao.

Several modern writers, however, of great learning, have called in queſtion the very exiſtence of Sanchoniatho, and have contended with much plauſibility, that the fragments which Euſebius adopted as genuine upon the authority of Porphyry, were forged by that author, or the pretended tranſlator Philo, from enmity to the Chriſtians, and that the Pagans might have ſomething to ſhow of equal antiquity with the books of Moſes. Theſe oppoſite opinions have produced a controverſy that has filled volumes, and of which our limits would hardly admit of an abſtract. We ſhall therefore in few words ſtate what to us appears to be the truth, and refer ſuch of our readers as are deſirous of fuller information to the works of the authors (A) mentioned at the bottom of the page.

The controverſy reſpecting Sanchoniatho reſolves itſelf into two queſtions: 1. Was there in reality ſuch a writer? 2. Was he of the very remote antiquity which his tranſlator claims for him?

That there was really ſuch a writer, and that the fragments preſerved by Euſebius are indeed parts of his hiſtory interpolated perhaps by the tranſlator (B), we are compelled to believe by the following reaſons. Euſebius, who admitted them into his work as authentic, was one of the moſt learned men of his age, and a diligent ſearcher into antiquity. His conduct at the Nicene council ſhows, that on every ſubject he thought for himſelf, neither biaſſed by authority to the one ſide, nor carried over by the rage of innovation to the other. He had better means than any modern writer can have of ſatisfying himſelf with reſpect to the authenticity of a very extraordinary work, which had then but lately

(A) Bochart, Scaliger, Voſſius, Cumberland, Dodwell, Stillingfleet, Mosheim's Cudworth, and Warburton.

(B) Of this there are indeed ſeveral proofs. Philo makes Sanchoniatho ſpeak of *Byblus* as the moſt ancient city of Phenicia, which, in all probability, it was not. We read in the book of Judges of *Baalah* or *Beyrus*, the city where Sanchoniatho himſelf lived; but not of Byblus, which was the native city of Philo, and to which he is therefore partial. He makes him likewiſe talk of the Greeks at a period long before any of the Grecian ſtates were known or probably peopled.

Sanchoniatho. been translated into the Greek language, and made generally known; and there is nothing in the work itself, or at least in those parts of it which he has preserved, that could induce a wise and good man to obtrude it upon the public as genuine, had he himself suspected it to be spurious. Too many of the Christian fathers were indeed very credulous, and ready to admit the authenticity of writings without duly weighing the merits of their claim; but then such writings were always believed to be favourable to the Christian cause, and inimical to the cause of Paganism. That no man of common sense could suppose the cosmogony of Sanchoniatho favourable to the cause of revealed religion, a farther proof cannot be requisite than what is furnished by the following extract. Sanchoniatho.

"He supposeth, or affirms, that the principles of the universe was a dark and windy air, or a wind made of dark air, and a turbulent evening *chaos*; and that these things were boundless, and for a long time had no bound or figure. But when this wind fell in love with his own principles, and a mixture was made, that mixture was called *desire* or *cupid* (πόθος).

"This mixture completed, was the beginning of the (κτίσις) making of all things. But that wind did not know its own production; and of this, with that wind, was begotten *Mot*, which some call *Mud*, others the putrefaction of a watery mixture. And of this came all the seed of this building, and the generation of the universe.

"But there were certain animals, which had no sense, out of which were begotten intelligent animals, and were called *Zophesemin*, that is, the spies or overseers of Heaven; and were formed alike in the shape of an egg. Thus shone out *Mot*, the sun and the moon, the less and the greater stars.

"And the air shining thoroughly with light, by its fiery influence on the sea and earth, winds were begotten, and clouds and great defluxions of the heavenly waters. And when all these things first were parted, and were separated from their proper place by the heat of the sun, and then all met again in the air, and dashed against one another, and were so broken to pieces; whence thunders and lightenings were made: and at the stroke of these thunders the forementioned intelligent animals were awakened, and frighted with the sound; and male and female stirred in the earth and in the sea: This is their generation of animals.

"After these things our author (Sanchoniatho) goes on saying: These things are written in the *Cosmogony* of *Taautus*, and in his memoirs; and out of the conjectures, and surer natural signs which his mind saw, and found out, and wherewith he hath enlightened us.

"Afterwards declaring the names of the winds, *north* and *south* and the rest, he makes this epilogue. 'But these first men consecrated the plants shooting out of the earth, and judged them gods, and worshipped them; upon whom they themselves lived, and all their posterity and all before them: to these they made their meat and drink offerings.' Then he concludes: 'these were the devices of worship agreeing with the weakness and want of boldness in their minds.'"

Let us suppose Eusebius to have been as weak and credulous as the darkest monk in the darkest age of Europe, a supposition which no man will make who knows any thing of the writings of that eminent historian; what could he see in this senseless jargon, which even a dreaming monk would think of employing in support of Christianity? Eusebius calls it, and calls it truly, direct atheism; but could he imagine that an ancient system of atheism would contribute so much to make the Pagans of his age admit as divine revelations the books of the Old and New Testaments, that he should be induced to adopt, without examination, an impudent forgery not 200 years old as genuine remains of the most remote antiquity?

If this Phenician cosmogony be a fabrication of Porphyry, or of the pretended translator, it must surely have been fabricated for some purpose; but it is impossible for us to conceive what purpose either of these writers could have intended to serve by forging a system so extravagantly absurd. Porphyry, though an enemy to the Christians, was not an atheist, and would never have thought of making an atheist of him whom he meant to obtrude upon the world as the rival of Moses. His own principles were those of the Alexandrian Platonists; and had he been the forger of the works which bear the name of Sanchoniatho, instead of the incomprehensible jargon about *dark wind*, *evening chaos*, *Mot*, the *overseers of heaven in the shape of an egg*, and *animation proceeding from the sound of thunder*, we should doubtless have been amused with refined speculations concerning the operations of the *Demiurgus* and the other persons in the Platonic Triad. See Platonism and Porphyry.

Father Simon of the oratory imagines * that the purpose for which the history of Sanchoniatho was forged, was to support Paganism, by taking from it its mythology and allegories, which were perpetually objected to it by the Christian writers; but this learned man totally mistakes the matter. The primitive Christians were too much attached to allegories themselves to rest their objections to Paganism on such a foundation: what they objected to that system was the immoral stories told of the gods. To this the Pagan priests and philosophers replied, that these stories were only *mythologic allegories*, which veiled all the great truths of Theology, Ethics, and Physics. The Christians said, this could not be; for that the stories of the gods had a substantial foundation in fact, these gods being only dead men deified, who, in life, had like passions and infirmities with other mortals. This then was the objection which the forger of the works of Sanchoniatho had to remove, if he really forged them in support of Paganism; but, instead of doing so, he gives the genealogy and history of all the greater gods, and shows, that they were men deified after death for the exploits, some of them grossly immoral, which they had performed in this world. We have elsewhere (Polytheism, n° 17.) given his account of the deification of *Chrysor*, and *Ouranos*, and *Ge*, and *Hypsistos*, and *Muth*; but our readers may not perhaps be ill-pleased to accompany him through the history of *Ouranos* and *Cronus*, two of his greatest gods; whence it will appear how little his writings are calculated to support the tottering cause of Paganism against the objections which were then urged to it by the Christian apologists. * Bib. Crit. vol. i. p. 140.

"Ouranos (says he), taking the kingdom of his father, married Ge his sister, and by her had four sons; *Ilus*, who is called *Cronus*; *Betylus*; *Dagon*, who is *Siton*, or the *god of corn*; and *Atlas*. But by other wives Ouranos

Sanchoniatho.

Ouranos had much iſſue, wherefore Ge being grieved at it and jealous, reproached Ouranos, ſo as they parted from each other. But Ouranos, though he parted from her, yet by force invading her, and lying with her when he liſted, went away again; and he alſo attempted to kill the children he had by her. Ge alſo often defended or avenged herſelf, gathering auxiliary powers unto her. But when Cronus came to man's age, uſing Hermes Triſmegiſtus as his counſellor and aſſiſtant (for he was his ſecretary), he oppoſed his father Ouranos, avenging his mother. But Cronus had children, Perſephone and Athena; the former died a virgin, but by the counſel of the latter Athena, and of Hermes, Cronus made of iron a ſcymetar and a ſpear. Then Hermes, ſpeaking to the aſſiſtants of Cronus with enchanting words, wrought in them a keen deſire to fight againſt Ouranos in the behalf of Ge; and thus Cronus warring againſt Ouranos, drove him out of his kingdom, and ſucceeded in the imperial power or office. In the fight was taken a well-beloved concubine of Ouranos big with child. Cronus gave her in marriage to Dagon, and ſhe brought forth at his houſe what ſhe had in her womb by Ouranos, and called him *Demaroon*. After theſe things Cronus builds a wall round about his houſe, and founds *Byblus* the firſt city in Phenicia. Afterwards Cronus, ſuſpecting his own brother Atlas, with the advice of Hermes, throwing him into a deep hole of the earth, there buried him, and having a ſon called *Sadid*, he diſpatched him with his own ſword, having a ſuſpicion of him, and deprived his own ſon of life with his own hand. He alſo cut off the head of his own daughter, ſo that all the gods were amazed at the mind of Cronus. But in proceſs of time, Ouranos being in flight, or baniſhment, ſends his daughter Aſtarte, with two other ſiſters Rhea and Dione, to cut off Cronus by deceit, whom Cronus taking, made wives of theſe ſiſters. Ouranos, underſtanding this, ſent Eimarmene and Hore, Fate and Beauty, with other auxiliaries, to war againſt him: but Cronus, having gained the affections of theſe alſo, kept them with himſelf. Moreover, the god Ouranos deviſed *Betulia*, contriving ſtones that moved as having life. But Cronus begat on Aſtarte ſeven daughters called *Titanides* or *Artemides*; and he begat on Rhea ſeven ſons, the youngeſt of whom, as ſoon as he was born, was conſecrated a god. Alſo by Dione he had daughters, and by Aſtarte moreover two ſons, *Pothos* and *Eros*, i. e. Cupid and Love. But Dagon, after he had found out bread, corn, and the plough, was called *Zeus Arotrius*. To *Sydic*, or *the juſt*, one of the *Titanides* bare *Aſclepius*. Cronus had alſo in *Peræa* three ſons, 1. *Cronus* his father's nameſake. 2. *Zeus Belus*. 3. *Apollo*."

Is it conceivable, that a writer ſo acute as Porphyry, or indeed that any man of common ſenſe, either in his age or in that of Philo, would forge a book filled with ſuch ſtories as theſe, in order to remove the Chriſtian objections to the immoral characters of the Pagan divinities? The very ſuppoſition is impoſſible to be made. Nor let any one imagine that Sanchoniatho is here writing allegorically, and by his tales of *Ouranos*, and *Ge*, and *Cronus*, is only perſonifying the *heaven*, the *earth*, and *time*. On the contrary, he aſſures us, that *Ouranos*, or *Light*, or *Autochthon* (for he gives him all theſe names), was the ſon of one *Elioun* or *Hypſiſtos*, who dwelt about Byblus, and that from him the element which is over us was called *Heaven*, on account of its excellent beauty, as the earth was named *Ge* after his ſiſter and wife. And his tranſlator is very angry* with the Neotoric Greeks, as he calls them, becauſe that, "by a great deal of force and ſtraining, they laboured to turn all the ſtories of the gods into allegories and phyſical diſcourſes." This proves unanſwerably, that the author of this book, whoever he was, did not mean to veil the great truths of religion under the cloak of mythologic allegories; and therefore, if it was forged by Porphyry in ſupport of Paganiſm, the forger ſo far miſtook the ſtate of the queſtion between him and his adverſaries, that he contrived a book, which, if admitted to be ancient, totally overthrew his own cauſe.

Sanchoniatho.

* Apud Euſeb. Præp. Evang. lib. 1. cap. 6.

The next thing to be enquired into with reſpect to Sanchoniatho is his antiquity. Did he really live and write at ſo early a period as Porphyry and Philo pretend? We think he did not; and what contributes not a little to confirm us in our opinion, is that mark of national vanity and partiality, common to after-times, in making the ſacred myſteries of his own country original, and conveyed from Phenicia into Egypt. This, however, furniſhes an additional proof that Porphyry was not the forger of the work; for he well knew that the myſteries had their origin in Egypt (ſee MYSTERIES), and would not have fallen into ſuch a blunder. He is guilty, indeed, of a very great anachroniſm, when he makes Sanchoniatho contemporary with Semiramis, and yet pretends that what he writes of the Jews is compiled from the records of Hierombalus the prieſt of the god Jao; for Bochart has made it appear in the higheſt degree probable †, that *Hierombalus* or *Jeromb-baal* is the *Jerub-baal* or *Gideon* of ſcripture.

† Geogr. Sac. p. 2. book 2. lib. 2. cap. 17.

Between the reign of Semiramis and the Trojan war a period elapſed of near 800 years, whereas Gideon flouriſhed not above ſeventy years before the deſtruction of Troy. But ſuppoſing Sanchoniatho to have really conſulted the records of Gideon, it by no means follows that he flouriſhed at the ſame period with that judge of Iſrael. He ſpeaks of the building of Tyre as an ancient thing, while our beſt chronologers † place it in the time of Gideon. Indeed, were we certain that any writings had been left by that holy man, we ſhould be obliged to conclude, that a large tract of time had intervened between the death of their author and their falling into the hands of Sanchoniatho; for, ſurely, they could not, in a ſhort period, have been ſo completely corrupted as to give any countenance to his impious abſurdities. His atheiſtic coſmogony he does not indeed pretend to have got from the annals of the prieſt of Jao, but from records which were depoſited in his own town of Berytus by Thoth a Phenician philoſopher, who was afterwards made king of Egypt. But ſurely the annals of Gideon, if written by himſelf, and preſerved pure to the days of Sanchoniatho, muſt have contained ſo many truths of the Moſaic religion, as muſt have prevented any man of ſenſe from adopting ſo impoſſible a theory as Thoth's, though ſanctioned by the greateſt name of profane antiquity. Stillingfleet indeed thinks it moſt probable that Sanchoniatho became acquainted with the moſt remarkable paſſages of the life of Jerub-baal from annals written by a Phenician pen. He obſerves, that immediately after the death of Gideon, the Iſraelites with their uſual proneneſs to idolatry, worſhipped *Baal berith*, or the idol of Berytus,

† Scaliger.

Sanchoniatho, Sanctoft.

the town in which Sanchoniatho lived; and from this circumſtance he concludes that there muſt have been ſeen an intercourſe between the Hebrews and Berytians, that in proceſs of time the latter people might aſſume to themſelves the Jerub-baal of the former, and hand down his actions to poſterity as thoſe of a prieſt inſtead of a great commander. All this may be true; but if ſo, it amounts to a demonſtration that the antiquity of Sanchoniatho is not ſo high by many ages as that which is claimed for him by Philo and Porphyry, though he may ſtill be more ancient, as we think Voſſius has proved him to be*, than any other profane hiſtorian whoſe writings have come down to us either entire or in fragments.

* De Hiſt. Grec. lib. i. cap. 1.

But granting the authenticity of Sanchoniatho's hiſtory, what, it may be aſked, is the value of his fragments, that we ſhould be at any trouble to aſcertain whether they be genuine remains of high antiquity, or the forgeries of a modern impoſtor? We anſwer with the illuſtrious Stillingfleet, that though thoſe fragments contain ſuch abſurdities as it would be a diſgrace to reaſon to ſuppoſe credible; though the whole coſmogony is the groſſeſt ſink of atheiſm; and though many perſons make a figure in the hiſtory, whoſe very exiſtence may well be doubted; yet we, who have in our hands the light of divine revelation, may in this dungeon diſcover many excellent relics of ancient tradition, which throw no feeble light upon many paſſages of holy ſcripture, as they give us the origin and progreſs of that idolatry which was ſo long the opprobrium of human nature. They furniſh too a complete confutation of the extravagant chronology of the Chaldeans and Egyptians, and ſhew, if they be genuine, that the world is indeed not older than it is ſaid to be by Moſes. We ſhall conclude the article by earneſtly recommending to our readers an attentive peruſal of *Cumberland's* SANCHONIATHO.

SANCROFT (William), archbiſhop of Canterbury, was born at Freſingfield in Suffolk in 1616; and admitted into Emanuel college, Cambridge, in 1633. In 1642 he was elected a fellow; and, for refuſing to take the covenant, was ejected from his fellowſhip. In 1660 he was choſen one of the univerſity preachers; and in 1663 was nominated to the deanry of York. In 1664 he was inſtalled dean of St Paul's. In this ſtation he ſet himſelf with unwearied diligence to repair the cathedral, till the fire of London in 1666 employed his thoughts on the more noble undertaking of rebuilding it, toward which he gave 1400l. He alſo rebuilt the deanry, and improved the revenue of it. In 1668 he was admitted archdeacon of Canterbury, on the king's preſentation. In 1677, being now prolocutor of the convocation, he was unexpectedly advanced to the archbiſhopric of Canterbury. In 1678 he was committed to the tower, with ſix other biſhops, for preſenting a petition to the king againſt reading the declaration of indulgence. Upon king James II.'s withdrawing himſelf, he concurred with the lords in a declaration to the prince of Orange for a free parliament, and due indulgence to the Proteſtant diſſenters. But when that prince and his conſort were declared king and queen, his grace refuſing to take the oaths to their majeſties, he was ſuſpended and deprived. He lived in a very private manner, till he died in 1693. His learning, integrity, and piety, made him an exalted ornament to the church. He publiſhed a volume in 12mo, intitled *Modern Politics*, taken from Machiavel, Borgia, and other choice authors; Familiar Letters to Mr North, an 8vo pamphlet; and three of his ſermons were printed together after his death.

Sanctification ‖ Sand.

SANCTIFICATION, the act of ſanctifying, or rendering a thing holy. The reformed divines define ſanctification to be an act of God's grace, by which a perſon's deſires and affections are alienated from the world; and by which he is made to die to ſin, and to live to righteouſneſs; or, in other words, to feel an abhorrence of all vice, and a love of religion and virtue.

SANCTION, the authority given to a judicial act, by which it becomes legal and authentic.

SANCTORIUS, a moſt ingenious and learned phyſician, was a profeſſor in the univerſity of Padua, in the beginning of the 17th century. He contrived a kind of ſtatical chair, by means of which, after eſtimating the aliments received, and the ſenſible diſcharges, he was enabled to determine with great exactneſs the quantity of inſenſible perſpiration, as well as what kind of victuals and drink increaſed or diminiſhed it. On theſe experiments he erected a curious ſyſtem, which he publiſhed under the title of *De medicina ſtatica*; of which we have an Engliſh tranſlation by Dr Quincy. Sanctorius publiſhed ſeveral other treatiſes, which ſhewed great abilities and learning.

SANCTUARY, among the Jews, alſo called *Sanctum ſanctorum*, or *Holy of holies*, was the holieſt and moſt retired part of the temple of Jeruſalem, in which the ark of the covenant was preſerved, and into which none but the high-prieſt was allowed to enter, and that only once a-year, to intercede for the people.

Some diſtinguiſh the ſanctuary from the ſanctum ſanctorum, and maintain that the whole temple was called the *ſanctuary*.

To try and examine any thing by the weight of the ſanctuary, is to examine it by a juſt and equal ſcale; becauſe, among the Jews, it was the cuſtom of the prieſts to keep ſtone weights, to ſerve as ſtandards for regulating all weights by, though theſe were not at all different from the royal or profane weights.

SANCTUARY, in the Romiſh church, is alſo uſed for that part of the church in which the altar is placed, encompaſſed with a rail or balluſtrade.

SANCTUARY, in ancient cuſtoms, the ſame with ASYLUM.

SAND, in natural hiſtory, a genus of foſſils, the characters of which are, that they are found in minute concretions; forming together a kind of powder, the genuine particles of which are all of a tendency to one determinate ſhape, and appear regular though more or leſs complete concretions; not to be diſſolved or diſunited by water, or formed into a coherent maſs by means of it, but retaining their figure in it; tranſparent, vitrifiable by extreme heat, and not diſſoluble in nor effervеſcing with acids. Sands are ſubject to be variouſly blended, both with homogene and heterogene ſubſtances, as that of talks, &c. and hence, as well as from their various colours, are ſubdivided into, 1. White ſands, whether pure or mixed with other arenaceous or heterogeneous particles; of all which there are ſeveral ſpecies, differing no leſs in the fineneſs of their particles than in the different degrees of colour, from a bright and ſhining white,

Sand. white, to a browniſh, yelloviſh, greeniſh, &c. white. 2. The red and reddiſh ſands, both pure and impure. 3. The yellow ſands, whether pure or mixed, are alſo very numerous. 4. The brown ſands, diſtinguiſhed in the ſame manner. 5. The black ſands, whereof there are only two ſpecies, viz. a fine ſhining greyiſh-black ſand, and another of a fine ſhining reddiſh-black colour. 6. The green kind; of which there is only one known ſpecies, viz. a coarſe variegated duſky green ſand, common in Virginia. Sand.

Sand is of great uſe in the glaſs-manufacture; a white kind of ſand being employed for making of the white glaſs, and a coarſe greeniſh-looking ſand for the green glaſs.

In agriculture, it ſeems to be the office of ſand to make unctuous earths fertile, and fit to ſupport vegetables, &c. For earth alone, we find, is liable to coaleſce, and gather into a hard coherent maſs, as appears in clay; and being thus embodied, and as it were glued together, is no way diſpoſed to nouriſh vegetables. But if ſuch earth be mixed with ſand, its pores are thereby kept open, and the earth itſelf looſe, ſo as thus to give room for the juices to aſcend, and for plants to be nouriſhed thereby. A vegetable planted only in ſand, or in a fat glebe, or in earth, receives little growth or increaſe; but a mixture of both renders the maſs fertile. In effect, earth is in ſome meaſure made organical by means of ſand; pores and ſpaces, ſomething analogous to veſſels, being thereby maintained, by which the juices may be conveyed, prepared, digeſted, circulated, and at length diſcharged. Common ſand is, therefore, a very good addition, by way of manure, to all ſorts of clay-lands; it warms them, and makes them more open and looſe.

Sand-Bags, in the art of war. See *Sacks of Earth*.

Sand-Eel, in ichthyology. See Ammodytes.

Sand-Floods, a name given to the flowing of ſand ſo common in the deſerts of Arabia. Mr Bruce gives the following accurate deſcription of ſome that he ſaw in travelling through that long and dreary deſert. "At one o'clock (ſays he) we alighted among ſome acacia-trees at Waadi el Halboub, having gone twenty-one miles. We were here at once ſurpriſed and terrified by a ſight ſurely one of the moſt magnificent in the world. In that vaſt expanſe of deſert from weſt and to north-weſt of us, we ſaw a number of prodigious pillars of ſand at different diſtances, at times moving with great celerity, at others ſtalking on with a majeſtic ſlowneſs: at intervals we thought they were coming in a few minutes to overwhelm us; and ſmall quantities of ſand did actually more than once reach us. Again they would retreat ſo as to be almoſt out of ſight, their tops reaching to the very clouds. There the tops often ſeparated from the bodies; and theſe, once diſjoined, diſperſed in the air, and did not appear more. Sometimes they were broken near the middle, as if ſtruck with a large cannon ſhot. About noon they began to advance with conſiderable ſwiftneſs upon us, the wind being very ſtrong at north. Eleven of them ranged along ſide of us about the diſtance of three miles. The greateſt diameter of the largeſt appeared to me at that diſtance as if it would meaſure ten feet. They retired from us with a wind at ſouth eaſt, leaving an impreſſion upon my mind to which I can give no name, though ſurely one ingredient in it was fear, with a conſiderable deal of wonder and aſtoniſhment. It was in vain to think of flying, the ſwifteſt horſe or faſteſt ſailing ſhip could be of no uſe to carry us out of this danger; and the full perſuaſion of this rivetted me as if to the ſpot where I ſtood, and let the camels gain on me ſo much in my ſtate of lameneſs, that it was with ſome difficulty I could overtake them.

"The ſame appearance of moving pillars of ſand preſented themſelves to us this day in form and diſpoſition like thoſe we had ſeen at Waadi Halboub, only they ſeemed to be more in number and leſs in ſize. They came ſeveral times in a direction cloſe upon us, that is, I believe, within leſs than two miles. They began immediately after ſun-riſe, like a thick wood, and almoſt darkened the ſun: his rays ſhining through them for near an hour, gave them an appearance of pillars of fire. Our people now became deſperate: the Greeks ſhrieked out, and ſaid it was the day of judgment. Iſmael pronounced it to be hell, and the Tucorories, that the world was on fire. I aſked Idris if ever he had before ſeen ſuch a ſight? He ſaid he had often ſeen them as terrible, though never worſe; but what he feared moſt was that extreme redneſs in the air, which was a ſure preſage of the coming of the ſimoon." See Simoon.

The flowing of ſand, though far from being ſo tremendous and hurtful as in Arabia, is of very bad conſequences in Britain, as many valuable pieces of land have thus been entirely loſt; of which we give the following inſtances from Mr Pennant, together with a probable means of preventing them in future. "I have more than once (ſays he), on the eaſtern coaſts of Scotland, obſerved the calamitous ſtate of ſeveral extenſive tracts, formerly in a moſt flouriſhing condition, at preſent covered with ſands, unſtable as thoſe of the deſerts of Arabia. The pariſh of Furvie, in the county of Aberdeen, is now reduced to two farms, and above L. 500 a-year loſt to the Errol family, as appears by the oath of the factor in 1600, made before the court of ſeſſion to aſcertain the miniſter's ſalary. Not a veſtige is to be ſeen of any buildings, unleſs a fragment of the church.

"The eſtate of Coubin, near Forres, is another melancholy inſtance. This tract was once worth L. 300 a-year, at this time overwhelmed with ſand. This ſtrange inundation was ſtill in motion in 1769, chiefly when a ſtrong wind prevailed. Its motion is ſo rapid, that I have been aſſured, that an apple-tree has been ſo covered with it in one ſeaſon, that only the very ſummit appeared. This diſtreſs was brought on about ninety years ago, and was occaſioned by the cutting down ſome trees, and pulling up the bent or ſtar which grew on the ſand-hills; which at laſt gave riſe to the act of 15 George II. c. 33. to prohibit the deſtruction of this uſeful plant.

"I beg leave to ſuggeſt to the public a poſſible means of putting a ſtop to theſe deſtructive ravages. Providence hath kindly formed this plant to grow only in pure ſand. Mankind was left to make, in after-times, an application of it ſuitable to their wants. The ſand-hills, on a portion of the Flintſhire ſhores, in the pariſh of Llanaſa, are covered with it naturally, and kept firm in their place. The Dutch perhaps owe the exiſtence of part at leaſt of their country to the ſowing of it on the *rudis fetum*, their ſand-banks.

"My humane and amiable friend, the late Benjamin Stillingfleet,

Sand. Stillingfleet, Eſq; reccommended the ſowing of this plant on the ſandy wilds of Norfolk, that its matted roots might prevent the deluges of ſand which that country experiences. It has been already remarked, that whereſoever this plant grows the ſalutary effects are ſoon obſerved to follow. A ſingle plant will fix the ſand, and gather it into a hillock; theſe hillocks, by the increaſe of vegetation, are formed into larger, till by degrees a barrier is made often againſt the encroachments of the ſea; and might as often prove preventative of the calamity in queſtion. I cannot, therefore, but recommend the trial to the inhabitants of many parts of North Britain. The plant grows in moſt places near the ſea, and is known to the Highlanders by the name of *murah;* to the Engliſh by that of *lent-ſtar*, *mat-graſs*, or *marran*. Linnæus calls it *arundo arenaria*. The Dutch call it *helm*. This plant hath ſtiff and ſharp-pointed leaves, growing like a ruſh, a foot and a half long: the roots both creep and penetrate deeply into their ſandy beds: the ſtalk bears an ear five or ſix inches long, not unlike rye; the ſeeds are ſmall, brown, and roundiſh. By good fortune, as old Gerard obſerves, no cattle will eat or touch this vegetable, allotted for other purpoſes, ſubſervient to the uſe of mankind."

Sand-Piper, in ornithology. See Tringa.

Sand-Stone, a genus of ſtones belonging to the order of ſaxa; and including all thoſe which conſiſt of ſuch minute particles that they cannot eaſily be diſcerned by the eye. The ſpecies enumerated by Cronſtedt are,

1. Thoſe cemented by a clay, of which there are two varieties; one with porcelain clay, the other with common clay. The former is met with in Sweden under the ſtratum of coal in a coal-mine in the province of Shone, and is very hard and refractory in the fire, the other is found in the iſland of Gothland.

2. With lime, reſembling mortar made with coarſe ſand. There are two varieties, one conſiſting of tranſparent grey-coloured grains of quartz and white limeſtone, the other of a looſe texture, hardening in the air; but having the particles too fine to be viſible. The former of theſe is found in Sweden, the latter in France and Livonia.

3. Sand-ſtone having its particles bound together by an unknown cement. Of this there are four varieties; 1. Looſe; 2. Somewhat hard; 3. Compact; 4. Very hard; all of them found in different parts of Sweden.

4. Cemented by ruſt of iron, found in the form of looſe ſtones in ſeveral places.

Cronſtedt informs us that the greateſt part of ſand-ſtones conſiſt of quartz and mica, being thoſe ſubſtances which moſt readily admit of granulation without being reduced to powder. Some years ago the Baron de Dietrich ſhewed a ſingular variety of ſand-ſtone at Paris. It conſiſts of ſmall grains of hard quartz which ſtrike fire with ſteel united with ſome micaceous particles. It is flexible and elaſtic, the flexibility depending on the micaceous part and ſoftneſs of the gluten with which the particles are cemented. This elaſtic ſtone is ſaid to have been found at Brazil, and brought to Germany by his excellency the marquis de Lavradio. There are alſo two tables of white marble, kept in the palace of Borgheſe at Rome, which have the ſame property. But the ſparry particles of their ſubſtance, though tranſparent, are rather ſoft, and may be eaſily ſeparated by the nail. They effervesce with aquafortis, and there is alſo a ſmall mixture of minute particles of talk or mica. Sandal, Sandarach,

Sand-ſtones are of great uſe in buildings which are required to reſiſt air, water, and fire. Some of them are ſoft in the quarry, but become hard when expoſed to the air. The looſe ones are moſt uſeful, but the ſolid and hard ones crack in the fire, and take a poliſh when uſed as grindſtones. Stones of this kind ought therefore to be nicely examined before they are employed for the uſual purpoſes. Our author obſerves that the working maſons, or ſtone-cutters, ought to wear a piece of frize or baize before their mouths, to preſerve themſelves from a conſumption which their buſineſs is otherwiſe apt to bring on. Limeſtone, however, is not obſerved to have this effect.

To the liſt of ſand-ſtones Fabroni adds gritſtone, of greater or leſs hardneſs; moſtly of a grey, and ſometimes of a yelloviſh colour, compoſed of a ſiliceous and micaceous ſand, but rarely of a ſparry kind, with greater or leſſer particles cloſely connected with an argillaceous cement. It ſtrikes fire with ſteel, vitrifies in a ſtrong fire, and is generally indiſſoluble in acids. It is uſed for mill-ſtones, whet-ſtones, and ſometimes for filtering ſtones, as well as for building.

SANDAL, in antiquity, a rich kind of ſlipper worn on the feet by the Greek and Roman ladies, made of gold, ſilk, or other precious ſtuff; conſiſting of a ſole, with an hollow at one extreme to embrace the ancle, but leaving the upper part of the foot bare.

Sandal, is alſo uſed for a ſhoe or ſlipper worn by the pope and other Romiſh prelates when they officiate. It is alſo the name of a ſort of ſlipper worn by ſeveral congregations of reformed monks. This laſt conſiſts of no more than a mere leathern ſole, faſtened with latches or buckles, all the reſt of the foot being left bare. The capuchins wear ſandals; the recollects, clogs; the former are of leather, and the latter of wood.

Sandal-Wood. See Saunders.

SANDARACH, in natural hiſtory, a very beautiful native foſſil, though too often confounded with the common factitious red arſenic, and with the red matter formed by melting the common yellow orpiment.

It is a pure ſubſtance, of a very even and regular ſtructure, is throughout of that colour which dyers term an *orange ſcarlet*, and is conſiderably tranſparent even in the thickeſt pieces. But though, with reſpect to colour, it has the advantage of cinnabar while in the maſs, it is vaſtly inferior to it when both are reduced to powder. It is moderately hard, and remarkably heavy; and, when expoſed to a moderate heat, melts and flows like oil: if ſet on fire, it burns very briſkly.

It is found in Saxony and Bohemia, in the copper and ſilver mines; and is ſold to the painters, who find it a very fine and valuable red: but its virtues or qualities in medicine are no more aſcertained at this time than thoſe of the yellow orpiment.

Gum-Sandarach, is a dry and hard reſin, uſually met with in looſe granules, of the bigneſs of a pea, a horſe-bean, or larger; of a pale whitiſh yellow colour, tranſparent, and of a reſinous ſmell, brittle, very inflammable, of an acrid and aromatic taſte, and diffuſing a very pleaſant ſmell when burning. It is produced from a ſpecies

Sandemanians.

a ſpecies of the juniper; (ſee JUNIPERUS). It flows only from theſe trees in hot countries: but the natives promote its diſcharge by making inciſions in the bark.

Sandarach is eſteemed good in diarrhœas and in hæmorrhagies.

The varniſh-makers make a kind of varniſh of it, by diſſolving it in oil of turpentine or linſeed, or in ſpirit of wine.

Powdered Sandarach. See POUNCE.

SANDEMANIANS, in eccleſiaſtical hiſtory, a modern ſect that originated in Scotland about the year 1728; where it is at this time diſtinguiſhed by the name of *Glaſſites*, after its founder Mr John Glaſs, who was a miniſter of the eſtabliſhed church in that kingdom; but being charged with a deſign of ſubverting the national covenant, and ſapping the foundation of all national eſtabliſhments by the Kirk judicatory, was expelled by the ſynod from the church of Scotland. His ſentiments are fully explained in a tract publiſhed at that time, intitled, "The Teſtimony of the King of Martyrs," and preſerved in the firſt volume of his works. In conſequence of Mr Glaſs's expulſion, his adherents formed themſelves into churches, conformable in their inſtitution and diſcipline to what they apprehended to be the plan of the firſt churches recorded in the New Teſtament. Soon after the year 1755, Mr Robert Sandeman, an elder in one of theſe churches in Scotland, publiſhed a ſeries of letters addreſſed to Mr Hervey, occaſioned by his Theron and Aſpaſia; in which he endeavours to ſhow, that his notion of faith is contradictory to the ſcripture account of it, and could only ſerve to lead men, profeſſedly holding the doctrines commonly called *Calviniſt*, to eſtabliſh their own righteouſneſs upon their frames, inward feelings, and various acts of faith. In theſe letters Mr Sandeman attempts to prove, that faith is neither more nor leſs than a ſimple aſſent to the divine teſtimony concerning Jeſus Chriſt, recorded in the New Teſtament; and he maintains, that the word *faith*, or *belief*, is conſtantly uſed by the apoſtles to ſignify what is denoted by it in common diſcourſe, viz. a perſuaſion of the truth of any propoſition, and that there is no difference between believing any common teſtimony, and believing the apoſtolic teſtimony, except that which reſults from the nature of the teſtimony itſelf. This led the way to a controverſy, among thoſe who were called *Calviniſts*, concerning the nature of juſtifying faith: and thoſe who adopted Mr Sandeman's notion of it, and who took the denomination of *Sandemanians*, formed themſelves into church order, in ſtrict fellowſhip with the churches in Scotland, but holding no kind of communion with other churches. The chief opinions and practices in which this ſect differs from other Chriſtians, are, their weekly adminiſtration of the Lord's Supper; their love-feaſts, of which every member is not only allowed but required to partake, and which conſiſt of their dining together at each other's houſes in the interval between the morning and afternoon ſervice; their kiſs of charity uſed on this occaſion, at the admiſſion of a new member, and at other times, when they deem it to be neceſſary or proper; their weekly collection before the Lord's Supper, for the ſupport of the poor, and defraying other expences; mutual exhortation; abſtinence from blood and things ſtrangled; waſhing each other's feet, the precept concerning which, as well as other precepts, they underſtand literally; community of goods, ſo far as that every one is to conſider all that he has in his poſſeſſion and power as liable to the calls of the poor and church; and the unlawfulneſs of laying up treaſures on earth, by ſetting them apart for any diſtant, future, and uncertain uſe. They allow of public and private diverſions, ſo far as they are not connected with circumſtances really ſinful; but apprehending a lot to be ſacred, diſapprove of playing at cards, dice, &c. They maintain a plurality of elders, paſtors, or biſhops, in each church; and the neceſſity of the preſence of two elders in every act of diſcipline, and at the adminiſtration of the Lord's Supper. In the choice of theſe elders, want of learning, and engagements in trade, &c. are no ſufficient objection; but ſecond marriages diſqualify for the office; and they are ordained by prayer and faſting, impoſition of hands, and giving the right hand of fellowſhip. In their diſcipline they are ſtrict and ſevere; and think themſelves obliged to ſeparate from the communion and worſhip of all ſuch religious ſocieties as appear to them not to profeſs the ſimple truth for their only ground of hope, and who do not walk in obedience to it. We ſhall only add, that in every church tranſaction, they eſteem unanimity to be abſolutely neceſſary. From this abſtract of the account which they have publiſhed of their tenets and practices, it does not ſeem to be probable that their number ſhould be very conſiderable.

Sanders, or Sandpu.

SANDERS. See SAUNDERS.

SANDIVER, a whitiſh ſalt, continually caſt up from the *metal*, as it is called, whereof glaſs is made; and, ſwimming on its ſurface, is ſkimmed off.

Sandiver is alſo plentifully thrown out in the eruptions of volcanoes; ſome is of a fine white, and others tinged bluiſh or yellowiſh.

Sandiver is ſaid to be detergent, and good for foulneſſes of the ſkin. It is alſo uſed by guilders of iron.

SANDIX, a kind of minium, or red-lead, made of ceruſe, but much inferior to the true minium.

SANDOMIR, a city, the capital of a palatinate of the ſame name, in Little Poland, on the Viſtula. The Swedes blew up the caſtle in 1656; and here in 1659, was a dreadful battle between the Tartars and Ruſſians. It is 84 miles ſouth-eaſt of Cracow. Lat. 49. 26. Long. 20. 10.

SANDORICUM, in botany: A genus of the monogynia order, belonging to the decandria claſs of plants; and in the natural method ranking under the 23d order, *Tribillatæ*. The calyx is quinquedentate; the petals five, and linear-ſhaped; the nectarium has ten dentæ, on which the antheræ grow; the fruit is a drupa, and five in number, each of which has one ſeed. There is only one ſpecies, viz. the indicum, a native of Africa and the Eaſt Indies.

SANDPU, or SANPOO, the vulgar name of one of the moſt mighty rivers in the world. The name it generally goes by, and by which it is beſt known, is that of *Burrampooter*. Of this moſt majeſtic body of waters we have the following very animated account in *Maurice's Indian Antiquities*. "An object equally novel and grand now claims our attention; ſo novel, as not to have been known to Europeans in the real extent of its magnificence before the year 1765, and ſo awfully grand, that the aſtoniſhed geographer, thinking the language of proſe inadequate to convey his conception,

Las

Sandpu. Sandwich. has had recourſe to the more expreſſive and energetic language of poetry: but

> ——— Scarce the Muſe herſelf
> Dares ſtretch her wing o'er this enormous maſs
> Of rushing waters; to whoſe dread expanſe,
> Continuous depth, and wond'rous length of courſe,
> Our floods are rills.

"This ſtupendous object is the Burrampooter, a word which in Shanſcrit ſignifies *the ſon of Brahma*; for no meaner origin could be aſſigned to ſo wonderful a progeny. This ſupreme monarch of Indian rivers derives its ſource from the oppoſite ſide of the ſame mountain from which the Ganges ſprings, and taking a bold ſweep towards the eaſt, in a line directly oppoſite to the courſe of that river, waſhes the vaſt country of Tibet, where, by way of diſtinction, it is denominated *Simpoo*, or *the river*. Winding with a rapid current through Tibet, and, for many a league, amidſt dreary deſerts and regions remote from the habitations of men, it waters the borders of the territory of Laſſa, the reſidence of the grand Lama; and then deviating with a cometary irregularity, from an eaſt to a ſouth-eaſt courſe, the *mighty wanderer* approaches within 200 miles of the weſtern frontiers of the vaſt empire of China. From this point its more direct path to the ocean lay through the gulph of Siam; but with a deſultory courſe peculiar to itſelf, it ſuddenly turns to the weſt through Aſſam, and enters Bengal on the north-eaſt quarter. Circling round the weſtern point of the Garrow mountains, the Burrampooter now takes a ſouthern direction; and for 60 miles before it meets the Ganges, its ſiſter in point of origin, but not its rival in point of magnitude, glides majeſtically along in a ſtream which is regularly from four to five miles wide, and but for its freſhneſs, Mr Rennel ſays, might paſs for an arm of the ſea. About 40 miles from the ocean theſe mighty rivers unite their ſtreams; but that gentleman is of opinion that their junction was formerly higher up, and that the accumulation of two ſuch vaſt bodies of water, ſcooped out the amazing bed of the Megna lake. Their preſent conflux is below Luckipoor; and by that confluence a body of freſh running water is produced, hardly equalled, and not exceeded, either in the old or the new hemiſphere. So ſtupendous is that body of water, that it has formed a gulph of ſuch extent as to contain iſlands that rival the Iſle of Wight in ſize and fertility; and with ſuch reſiſtleſs violence does it ruſh into the ocean, that in the rainy ſeaſon the ſea itſelf, or at leaſt its ſurface, is perfectly freſh for many leagues out."

SANDWICH, a town of Kent, one of the cinque ports, and which has the title of an earldom. It conſiſts of about 1500 houſes, moſt of them old, and built with wood, though there are a few new ones built with brick and flints. It has three long narrow ſtreets, paved, and thirty croſs-ſtreets or alleys, with about 6000 inhabitants, but no particular manufactory. The town is walled round, and alſo fortified with ditches and ramparts; but the walls are much decayed, on account of the harbour being ſo choaked up with ſand that a ſhip of 100 tons burthen cannot get in. E. Long. 1. 22. N. Lat. 51. 22.

Sandwich-Iſlands, a group of iſlands in the South Sea, lying near New Ireland, were among the laſt diſcoveries of captain Cook, who ſo named them in honour of the Earl of Sandwich, under whoſe adminiſtration theſe diſcoveries were made. Sandwich. They conſiſt of eleven iſlands, extending in latitude from 18. 54. to 22. 15. N. and in longitude from 150. 54. to 160. 24. W. They are called by the natives, Owhyhee, Mowee, Ranai, *Morotoi*, Tahoorowa, Woahoo, Atooi, *Nechecheow*, *Oreehoua*, *Morotinne*, and Tahoora, all inhabited except the two laſt. An account of the moſt remarkable of which will be found in their alphabetical order, in their proper places in this work. The climate of theſe iſlands differs very little from that of the Weſt Indies in the ſame latitude, though perhaps more temperate; and there are no traces of thoſe violent winds and hurricanes, which render the ſtormy months in the Weſt Indies ſo dreadful. There is alſo more rain at the Sandwich Iſles, where the mountainous parts being generally enveloped in a cloud, ſucceſſive ſhowers fall in the inland parts, with fine weather and a clear ſky, on the ſea ſhore. Hence it is, that few of thoſe inconveniencies, to which many tropical countries are ſubject, either from heat or moiſture, are experienced here. The winds, in the winter months, are generally from eaſt-ſouth-eaſt to north-eaſt. The vegetable productions are nearly the ſame as thoſe of the other iſlands in this ocean; but the taro root is here of a ſuperior quality. The bread-fruit trees thrive not in ſuch abundance as in the rich plains of Otaheite, but produce double the quantity of fruit. The ſugar-canes are of a very unuſual ſize, ſome of them meaſuring eleven inches and a quarter in circumference, and having fourteen feet eatable. There is alſo a root of a brown colour, ſhaped like a yam, and from ſix to ten pounds in weight, the juice of which is very ſweet, of a pleaſant taſte, and is an excellent ſubſtitute for ſugar. The quadrupeds are confined to the three uſual ſorts, hogs, dogs, and rats. The fowls are alſo of the common ſort; and the birds are beautiful and numerous, though not various. Goats, pigs, and European ſeeds, were left by captain Cook; but the poſſeſſion of the goats ſoon gave riſe to a conteſt between two diſtricts, in which the breed was entirely deſtroyed. The inhabitants are undoubtedly of the ſame race that poſſeſſes the iſlands ſouth of the equator; and in their perſons, language, cuſtoms, and manners, approach nearer to the New Zealanders than to their leſs diſtant neighbours, either of the Society or Friendly Iſlands. They are in general about the middle ſize, and well made; they walk very gracefully, run nimbly, and are capable of bearing very great fatigue. Many of both ſexes have fine open countenances, and the women in particular have good eyes and teeth, with a ſweetneſs and ſenſibility of look, that render them very engaging. There is one peculiarity, characteriſtic of every part of theſe iſlands, that even in the handſomeſt faces there is a fulneſs of the noſtril, without any flatneſs or ſpreading of the noſe. They ſuffer their beards to grow, and wear their hair after various faſhions. The dreſs of both men and women nearly reſemble thoſe of New Zealand, and both ſexes wear necklaces of ſmall variegated ſhells. Tattowing the body is practiſed by every colony of this nation. The hands and arms of the women are alſo very neatly marked, and they have the ſingular cuſtom of tattowing the tip of the tongue. Like the New Zealanders, they have adopted the method of living together in villages, containing from an hundred to two hundred houſes,

Sandwich. houſes, built pretty cloſely together, without any order, and having a winding path between them. They are generally flanked, towards the ſea, with detached walls, which are meant both for ſhelter and defence. Theſe walls conſiſt of looſe ſtones, and the inhabitants are very dexterous in ſhifting them ſuddenly to ſuch places as the direction of the attack may require. In the ſides of the hills, or ſurrounding eminences, they have alſo little holes, or caves, the entrance to which is alſo ſecured by a fence of the ſame kind. They ſerve for places of retreat in caſes of extremity, and may be defended by a ſingle perſon againſt ſeveral aſſailants. Their houſes are of different ſizes, ſome of them being large and commodious, from forty to fifty feet long, and from twenty to thirty broad; while others are mere hovels. The food of the lower claſs conſiſts principally of fiſh and vegetables, to which the people of higher rank add the fleſh of dogs and hogs. The manner of ſpending their time admits of little variety. They riſe with the ſun, and, after enjoying the cool of the evening, retire to reſt, a few hours after ſun-ſet. The making of canoes, mats, &c. forms the occupations of the men; the women are employed in manufacturing cloth, and the ſervants are principally engaged in the plantations and fiſhing. Their idle hours are filled up with various amuſements, ſuch as dancing, boxing, wreſtling, &c. Their agriculture and navigation bear a great reſemblance to thoſe of the South-ſea iſlands. Their plantations, which are ſpread over the whole ſea-coaſt, conſiſt of the taro, or eddy-root, and ſweet potatoes, with plants of the cloth-trees ſet in rows. The bottoms of their canoes are of a ſingle piece of wood, hollowed out to the thickneſs of an inch, and brought to a point at each end. The ſides conſiſt of three boards, each about an inch thick, neatly fitted and laſhed to the bottom part. Some of their double canoes meaſure 70 feet in length, three and a half in depth, and twelve in breadth. Their cordage, fiſh-hooks, and fiſhing tackle, differ but little from thoſe of the other iſlands. Among their arts muſt not be forgotten that of making ſalt, which they have in great abundance, and of a good quality. Their inſtruments of war are ſpears, daggers, clubs, and ſlings; and for defenſive armour they wear ſtrong mats, which are not eaſily penetrated by ſuch weapons as theirs. As the iſlands are not united under one ſovereign, wars are frequent among them, which no doubt, contribute greatly to reduce the number of inhabitants, which, according to the proportion aſſigned to each iſland, does not exceed 400,000. The ſame ſyſtem of ſubordination prevails here as at the other iſlands, the ſame abſolute authority on the part of the chiefs, and the ſame unreſiſting ſubmiſſion on the part of the people. The government is likewiſe monarchical and hereditary. At Owhyhee there is a regular ſociety of prieſts living by themſelves, and diſtinct in all reſpects from the reſt of the people. Human ſacrifices are here frequent; not only at the commencement of a war, or any ſignal enterpriſe, but the death of every conſiderable chief calls for a repetition of theſe horrid rites. Notwithſtanding the irreparable loſs in the death of captain Cook, who was here murdered through ſudden reſentment and violence, they are acknowledged to be of the moſt mild and affectionate diſpoſition. They live in the utmoſt harmony and friendſhip with each other; and in hoſpitality to ſtrangers they are not exceeded even by the inhabitants of the Friendly Iſlands. Their natural capacity ſeems, in no reſpect, below the common ſtandard of mankind; and their improvements in agriculture, and the perfection of their manufactures, are certainly adequate to the circumſtances of their ſituation, and the natural advantages which they enjoy.

Sanguifi-cation.

SANDYS (Sir Edwin), ſecond ſon of Dr Edwin Sandys archbiſhop of York, was born about 1561, and educated at Oxford under Mr Richard Hooker, author of the Eccleſiaſtical Polity. In 1581 he was collated to a prebend in the cathedral of York. He travelled into foreign countries; and, upon his return, grew famous for learning, prudence, and virtue. While he was at Paris, he drew up a tract, publiſhed under the title of *Europæ Speculum*. In 1602, he reſigned his prebend; and, the year following, was knighted by king James I. who employed him in ſeveral important affairs. He was dexterous in any great employment, and a good patriot. However, oppoſing the court with vigour in the parliament held in 1621, he, with Mr Seldon, was committed to cuſtody for a month. He died in 1629, having bequeathed 1500 l. to the univerſity of Oxford, for the endowment of a metaphyſical lecture.

SANDYS (George), brother of the foregoing Sir Edwin, and youngeſt ſon of archbiſhop Sandys, was born in 1577. He was a moſt accompliſhed gentleman; travelled over ſeveral parts of Europe and the Eaſt; and publiſhed a relation of his journey in folio, in 1615. He made an elegant tranſlation of Ovid's Metamorphoſes; and compoſed ſome poetical pieces of his own, that were greatly admired in the times of their being written. He alſo paraphraſed the Pſalms; and has left behind him a Tranſlation, with Notes, of one Sacred Drama written originally by Grotius, under the title of *Chriſtus Patiens*; on which, and *Adamus Exul*, and *Maſenius*, is founded Lauder's impudent charge of plagiariſm againſt the immortal Milton. Our author became one of the privy chamber to Charles I. and died in 1643.

SAN FERNANDO, near the entrance of the Golfo Dolce, in 15 degrees 18 minutes north latitude, has lately been fortified by the Spaniards, with an intent to curb the Muſquito-men, logwood-cutters, and bay-men. It is a very good harbour, with ſafe anchorage from the north and eaſt winds, in eight fathoms water.

SANGUIFICATION, in the animal œconomy, the converſion of the chyle into true blood. See BLOOD.

SANGUINARIA, BLOOD-WORT, in botany: A genus of the monogynia order, belonging to the polyandria claſs of plants; and in the natural method ranking under the 27th order, *Rhœadæ*. The corolla is octopetalous; the calyx diphyllous; the ſiliqua ovate and unilocular. There is only one ſpecies, viz. the canadenſis, a native of the northern parts of America, where it grows plentifully in the woods; and in the ſpring, before the leaves of the trees come out, the ſurface of the ground is in many places covered with the flowers, which have ſome reſemblance to the wood anemone; but they have moſt naked pedicles, each ſupporting one flower at top. Some of theſe flowers will have 10 or 12 petals, ſo that they appear to have a double range of leaves, which has occaſioned their being termed *double flowers*; but this is only accidental, the ſame root

Sanguiſorba, Sanhedrim.

roots in different years producing different flowers.—The plant can bear the open air in this country, but ſhould be placed in a looſe ſoil and ſheltered ſituation, not too much expoſed to the ſun. It is propagated by the roots; which may be taken up and parted, in September, every other year. The Indians paint themſelves yellow with the juice of theſe plants.

SANGUISORBA, GREATER WILD BURNET, in botany: A genus of the monogynia order, belonging to the tetrandria claſs of plants; and in the natural method ranking under the 54th order *Miſcellaneæ*. The calyx is diphyllous; the germen ſituated betwixt the calyx and corolla. The moſt remarkable ſpecies is the officinalis, with oval ſpikes. This grows naturally in moiſt meadows in many parts of Britain. The ſtalks riſe from two to three feet high, branching towards the top; and are terminated by thick oval ſpikes of flowers of a greyiſh brown colour, which are divided into four ſegments almoſt to the bottom. Theſe are ſucceeded by four oblong cornered ſeeds. The leaves of this ſort are compoſed of five or ſix pair of lobes placed along a midrib, terminated by an odd one. Theſe are heart-ſhaped, deeply ſawed on their edges, and a little downy on their under ſides. The cultivation of this plant has been greatly recommended as food to cattle. See AGRICULTURE, n° 48, &c.

SANHEDRIM, or SANHEDRIN, from the Greek word Συνεδριον, which ſignifies a council or aſſembly of perſons ſitting together, was the name whereby the Jews called the great council of the nation, aſſembled in an apartment of the temple of Jeruſalem to determine the moſt important affairs both of their church and ſtate. This council conſiſted of ſeventy ſenators. The room they met in was a rotunda, half of which was bu. t without the temple, and half within; that is, one ſemicircle was within the compaſs of the temple; the other ſemicrcle, they tell us, was built without, for the ſenators to ſit in; it being unlawful for any one to ſit down in the temple. The Naſi, or prince of the ſanhedrim, ſat upon a throne at the end of the hall, having his deputy at his right hand, and his ſub-deputy on his left. The other ſenators were ranged in order on each ſide.

The rabbins pretend, that the ſanhedrim has always ſubſiſted in their nation from the time of Moſes down to the deſtruction of the temple by the Romans. They date the eſtabliſhment of it from what happened in the wilderneſs, ſome time after the people departed from Sinai (Numb. xi. 16.), in the year of the world 2514. Moſes, being diſcouraged by the continual murmurings of the Iſraelites, addreſſed himſelf to God, and deſired to be relieved, at leaſt, from ſome part of the burden of the government. Then the Lord ſaid to him, "Gather unto me 70 men of the elders of Iſrael, whom thou knoweſt to be the elders of the people, and officers over them; and bring them unto the tabernacle of the congregation, that they may ſtand there with thee: And I will come down and talk with thee there; and I will take of the ſpirit which is upon thee, and will put it upon them; and they ſhall bear the burden of the people with thee, that thou bear it not thyſelf alone." The Lord, therefore, poured out his ſpirit upon theſe men, who began at that time to prophecy, and have not ceaſed from that time. The ſanhedrim was compoſed of 70 counſellors, or rather 72, ſix out of each tribe; and Moſes, as preſident, made up the number 73. To prove the uninterrupted ſucceſſion of the judges of the ſanhedrim, there is nothing unattempted by the partiſans of this opinion. They find a proof where others cannot ſo much as perceive any appearance or ſhadow of it. Grotius may be conſulted in many places of his Commentaries, and in his firſt book *De jure belli & pacis*, c. 3. art. 20. and *Selden de Synedriis veterum Hebræorum*. Alſo, Calmet's Diſſertation concerning the polity of the ancient Hebrews, printed before his Comment upon the Book of Numbers. Sanhedrim.

As to the perſonal qualifications of the judges of this bench, their birth was to be untainted. They were often taken from the race of the prieſts or Levites, or out of the number of the inferior judges, or from the leſſer ſanhedrim, which conſiſted only of 23 judges.—They were to be ſkilful in the law, as well traditional as written. They were obliged to ſtudy magic, divination, fortune-telling, phyſic, aſtrology, arithmetic, and languages. The Jews ſay, they were to know to the number of 70 tongues; that is, they were to know all the tongues, for the Hebrews acknowledged but 70 in all, and perhaps this is t great a number. Eunuchs were excluded from the ſanhedrim, becauſe of their cruelty, uſurers, decrepid perſons, players at games of chance, ſuch as had any bodily deformities, thoſe that had brought up pigeons to decoy others to their pigeon-houſes, and thoſe that made a gain of their fruits in the ſabbatical year. Some alſo exclude the high-prieſt and the king, becauſe of their too great power; but others will have it, that the kings always preſided in the ſanhedrim, while there were any kings in Iſrael.—Laſtly, it was required, that the members of the ſanhedrim ſhould be of a mature age, a handſome perſon, and of conſiderable fortune. We ſpeak now according to the notions of the rabbins, without pretending to warrant their opinions.

The authority of the great ſanhedrim was vaſtly extenſive. This council decided ſuch cauſes as were brought before it by way of appeal from the inferior courts. The king, the high-prieſt, the prophets, were under its juriſdiction. If the king offended againſt the law, for example, if he married above 18 wives, if he kept too many horſes, if he hoarded up too much gold and ſilver, the ſanhedrim had him ſtripped and whipped in their preſence. But whipping, they ſay, among the Hebrews was not at all ignominious; and the king bore this correction by way of penance, and himſelf made choice of the perſon that was to exerciſe this diſcipline over him. Alſo, the general affairs of the nation were brought before the ſanhedrim. The right of judging in capital caſes belonged to this court, and this ſentence could not be pronounced in any other place, but in the hall called *Laſchat-haggazith*, or the *hall paved with ſtones*, ſuppoſed by ſome to be the Λιθοστρωτον, or *pavement*, mentioned in John xix. 13. From whence it came to paſs, that the Jews were forced to quit this hall when the power of life and death was taken out of their hands, 40 years before the deſtruction of their temple, and three years before the death of Jeſus Chriſt. In the time of Moſes this council was held at the door of the tabernacle of the teſtimony. As ſoon as the people were in poſſeſſion of the land of promiſe, the ſanhedrim followed the tabernacle. It was kept ſucceſſively

drim. fively at Gilgal, at Shiloh, at Kirjath-jearim, at Nob, at Gibeon in the house of Obed-edom; and lastly, it was settled at Jerusalem, till the Babylonish captivity. During the captivity it was kept up at Babylon. After the return from Babylon, it continued at Jerusalem to the time of the Syrian, or Assidæans. Then finding that these profligate wretches, whose number increased every day, sometimes escaped punishment by the favour of the president or judges, it was removed to Hanoth, which were certain shops situated, as the rabbins tell us, upon the mountain of the temple. From thence they came down into the city of Jerusalem, withdrawing themselves by degrees from the temple. Afterwards they removed to Jamnia, thence to Jericho, to Uzzah, to Sepharvaim, to Bethshean, to Sepphoris, last of all to Tiberias, where they continued to the time of their utter extinction. And this is the account the Jews themselves give us of the Sanhedrim.

But the learned do not agree with them in all this. Father Petau fixes the beginning of the sanhedrim not till Gabinius was governor of Judea, who, according to Josephus, erected tribunals in the five principal cities of Judea; at Jerusalem, at Gadara, at Amathus, at Jericho, and at Sephoris, a city of Galilee. Grotius places the origin of the sanhedrim under Moses, as the rabbins do; but he makes it determine at the beginning of Herod's reign. Mr Basnage at first thought that the sanhedrim began under Gabinius; but afterwards he placed it under Judas Maccabæus, or under his brother Jonathan. We see indeed, under Jonathan Maccabæus, (1 Macc. xii. 6.), in the year 3860, that the senate with the high-priest sent an embassy to the Romans. The rabbins say, that Alexander Jannæus, king of the Jews, of the race of the Asmonæans, appeared before the sanhedrim, and claimed a right of sitting there, whether the senators would or not. Josephus informs us, that when Herod was but yet governor of Galilee, he was summoned before the senate, where he appeared. It must be therefore acknowledged, that the sanhedrim was in being before the reign of Herod. It was in being afterwards, as we find from the Gospel and from the Acts. Jesus Christ in St Matthew (v. 22.) distinguishes two tribunals—"Whosoever is angry with his brother without a cause shall be in danger of the judgment." This, they say, is the tribunal of the 23 judges. "And whosoever shall say to his brother Raca, shall be in danger of the council;" that is, of the great sanhedrim, which had the right of life and death, at least generally, and before this right was taken away by the Romans. Some think that the jurisdiction of the council of 23 extended to life and death also; but it is certain that the sanhedrim was superior to this council. See also Mark xiii. 9. xiv. 55. xv. 1.; Luke xxii. 52, 66.; John xi. 47.; Acts iv. 15. v. 21. where mention is made of the synedrion, or sanhedrim.

From all this it may be concluded, that the origin of the sanhedrim is involved in uncertainty; for the council of the 70 elders established by Moses was not what the Hebrews understand by the name of sanhedrim. Besides, we cannot perceive that this establishment subsisted either under Joshua, the judges, or the kings. We find nothing of it after the captivity, till the time of Jonathan Maccabæus. The tribunals erected by Gabinius were very different from the sanhedrim, which was the supreme court of jurisdiction, and fixed at Jerusalem, whereas Gabinius established five at five different cities. Lastly, it is certain that this senate was in being in the time of Jesus Christ; but the Jews themselves inform us that they had no longer then the power of life and death (John xviii. 31.)

SANJACKS, a people inhabiting the Curdistan, or Persian mountains, subsisting chiefly by plunder, and the scanty pittance afforded by their own mountainous country. "They were much reduced (says Mr Ives) by the late bashaw Achmet of Bagdat, who pursued them in person to their subterranean retreats, and destroyed many by the sword, and carried off great numbers of prisoners, who were sold for slaves." Notwithstanding this check, in the year 1758, they were again become so daring that they would attack caravans of 700 men, and sometimes carry all off. They are said to be worshippers of the evil principle.

SAN JUAN DE PUERTO RICO, usually called *Porto Rico*, one of the West India islands belonging to Spain, is situated in about 18. N. Lat. and between 65. 36. and 67. 45. W. Long. and is about 40 leagues long and 20 broad. The island is beautifully diversified with woods, valleys, and plains, and is extremely fertile. It, it well watered with springs and rivers, abounds with meadows, is divided by a ridge of mountains running from east to west, and has a harbour so spacious that the largest ships may lie in it with safety. Before the arrival of the Spaniards it was inhabited by 4 or 500,000 people, who, in a few years, were extirpated by its merciless conquerors. Raynal says, that its whole inhabitants amounts at present only to 1500 Spaniards, Mestoes, and Mulattoes, and about 3200 negroes. Thus one of the finest islands in the West Indies has been depopulated by the cruelty, and left uncultivated by the indolence, of its possessors. But it is the appointment of Providence, who seldom permits flagrant crimes to pass unpunished, that poverty and wretchedness should be uniform consequences of oppression.

SANICULA, SANICLE, or *Self-heal*, in botany: A genus of the digynia order, belonging to the pentandria class of plants; and in the natural method ranking under the 45th order, *Umbellatæ*. The umbels are close together, almost in a round head; the fruit is scabrous; the flowers of the disk abortive. There are three species, viz. the canadensis, marilandica, and europæa, found in many parts both of Scotland and England. This plant was long celebrated for its healing virtues; but it is now totally disregarded.

SANIDIUM, in natural history, the name of a genus of fossils of the class of the selenitæ, but neither of the rhomboidal nor columnar kinds, nor any other way distinguishable by its external figure; being made up of several plain flat plates.

SANIES, in medicine, a serous putrid matter, issuing from wounds. It differs from pus, which is thicker and whiter.

SANNAZARIUS (James), in Latin *Actius Sincerus Sannazarius*, a celebrated Latin and Italian poet, born at Naples in 1458. He by his wit ingratiated himself into the favour of king Frederic; and, when that prince was dethroned, attended him into France, where he staid with him till his death, which happened in 1504. Sannazarius then returned into Italy, where he applied himself to polite literature, and particularly

Santa. to Latin and Italian poetry. His gay and facetious humour made him sought for by all companies; but he was so affected at the news that Philibert prince of Orange, general of the emperor's army, had demolished his country-house, that it threw him into an illness, of which he died in 1530. It is said, that being informed a few days before his death, that the prince of Orange was killed in battle, he called out, "I shall die contented, since Mars has punished this barbarous enemy of the Muses." He wrote a great number of Italian and Latin poems: among those in Latin, his *De Partu Virginis* and Eclogues are chiefly esteemed; and the most celebrated of his Italian pieces is his *Arcadia*. Santa.

SANTA CRUZ, a large island in the South Sea, and one of the most considerable of those of Solomon, being about 250 miles in circumference. W. Long. 130. 0. S. Lat. 10. 21.

Santa Cruz, or St CROIX, a small and unhealthy island, situated in about 64 degrees west longitude and 18 north latitude. It is about eighteen leagues in length, and from three to four in breadth. In 1643 it was inhabited by Dutch and English, who soon became enemies to each other; and in 1650 were both driven out by 1200 Spaniards, who arrived there in five ships. The triumph of these lasted but a few months. The remains of that numerous body, which were left for the defence of the island, surrendered without resistance to 160 French, who had embarked in 1651, from St Christopher's, to make themselves masters of the island.

Raynal's History of the East and West Indies, vol. 4th, p. 298.

These new inhabitants lost no time in making themselves acquainted with a country so much disputed. On a soil, in other respects excellent, they found only one river of a moderate size, which, gliding gently almost on a level with the sea through a flat country, furnished only a brackish water. Two or three springs, which they found in the innermost part of the island, made but feeble amends for this defect. The wells were for the most part dry. The construction of reservoirs required time. Nor was the climate more inviting to the new inhabitants. The island being flat, and covered with old trees, scarce afforded an opportunity for the winds to carry off the poisonous vapours with which its morasses clogged the atmosphere. There was but one remedy for this inconvenience; which was to burn the woods. The French set fire to them without delay; and, getting on board their ships, became spectators from the sea, for several months, of the conflagration they had raised in the island. As soon as the flames were extinguished, they went on shore again.

They found the soil fertile beyond belief. Tobacco, cotton, arnotto, indigo, and sugar, flourished equally in it. So rapid was the progress of this colony, that in 11 years from its commencement there was upon it 822 white persons, with a proportionable number of slaves. It was rapidly advancing to prosperity, when such obstacles were thrown in the way of its activity as made it decline again. This decay was as sudden as its rise. In 1696 there were no more than 147 men, with their wives and children, and 623 blacks remaining; and these were transported to St Domingo.

Some obscure individuals, some writers unacquainted with the views of government, with their secret negotiations, with the character of their ministers, with the interests of the protectors and the protected, who flatter themselves that they can discern the reason of events amongst a multitude of important or frivolous causes, which may have equally occasioned them; who do not conceive, that among all these causes the most natural may possibly be the farthest from the truth; who after having read the news, or journal of the day, with profound attention, decide as peremptorily as if they had been placed all their lifetime at the helm of the state, and had assisted at the council of kings; who are never more deceived than in these circumstances in which they display some share of penetration; writers as absurd in the praises as in the blame which they bestow upon nations, in the favourable or unfavourable opinion they form of ministerial operations: these idle dreamers, in a word, who think they are persons of importance, because their attention is always engaged on matters of consequence, being convinced that courts are always governed in their decisions by the most comprehensive views of profound policy, have supposed that the court of Versailles had neglected Santa Cruz, merely because they wished to abandon the small islands, in order to unite all their strength, industry, and population, in the large ones; but this is a mistaken notion. This determination arose from the farmers of the revenue, who found that the contraband trade of Santa Cruz with St Thomas was detrimental to their interests. The spirit of finance hath in all times been injurious to commerce; it hath destroyed the source from whence it sprang. Santa Cruz continued without inhabitants, and without cultivation, till 1733, when it was sold by France to Denmark for 30,750l. Soon after the Danes built there the fortress of Christianstadt. Then it was that this northern power seemed likely to take deep root in America. Unfortunately, she laid her plantations under the yoke of exclusive privileges. Industrious people of all sects, particularly Moravians, strove in vain to overcome this great difficulty. Many attempts were made to reconcile the interests of the colonists and their oppressors, but without success. The two parties kept up a continual struggle of animosity, not of industry. At length the government, with a moderation not to be expected from its constitution, purchased, in 1754, the privileges and effects of the company. The price was fixed at L. 412,500, part of which was paid in ready money, and the remainder in bills upon the treasury, bearing interest. From this time the navigation to the islands was opened to all the subjects of the Danish dominions. Of 345 plantations, which were seen at Santa Cruz, 150 were covered with sugar canes, and every habitation is limited to 3000 Danish feet in length, and 2000 in breadth. It is inhabited by 2136 white men, by 22,244 slaves, and by 155 freedmen.

Santa Cruz, in Teneriff. See TENERIFF.

Santa Cruz, a town of Africa, on the coast of Barbary, and in the province of Suez and kingdom of Morocco, with a harbour and a fort. The Moors took it from the Portuguese in 1536. It is seated at the extremity of Mount Atlas, on the Cape Aguer. W. Long. 10. 7. N. Lat. 30. 38.

Santa Cruz de la Sierra, a town of South America, and capital of a province of that name in Peru, and in the audience of Los Charcas, with a bishop's see.

Santa, Santalum.

fee. It is ſeated at the foot of a mountain, in a country abounding in good fruits, on the river Guapy. W. Long. 59. 35. S. Lat. 20. 40.

Santa Fe de Bogota, a town of South America, and capital of New Granada, with an archbiſhop's ſee, a ſupreme court of juſtice, and an univerſity.

The city ſituated at the foot of a ſteep and cold mountain, at the entrance of a vaſt and ſuperb plain. In 1774 it contained 1770 houſes, 3246 families, and 16,233 inhabitants. Population muſt neceſſarily increaſe there, ſince it is the ſeat of government, the place where the coin is ſtruck, the ſtaple of trade; and laſtly, ſince it is the reſidence of an archbiſhop, whoſe immediate juriſdiction extends over 31 Spaniſh villages, which are called towns; over 195 Indian colonies, anciently ſubdued; and over 28 miſſions, eſtabliſhed in modern times. This archbiſhop hath likewiſe, as metropolitan, a ſort of inſpection over the dioceſes of Quito, of Panama, of Caraccas, of St Martha, and of Carthagena. It is by this laſt place, though at the diſtance of 100 leagues, and by the river Magdalena, that Santa Fe keeps up its communication with Europe. There are ſilver mines in the mountains about the city. W. Long. 60. 5. N. Lat. 3. 58.

SANTALUM, in botany: A genus of the monogynia order, belonging to the octandria claſs of plants; and in the natural method ranking with thoſe of which the order is doubtful. The calyx is ſuperior; the corolla monopetalous; the ſtamina placed in the tube; the ſtigma is ſimple; the fruit a berry.

The ſantalum, or ſanders, grows to the ſize of a walnut-tree. Its leaves are entire, oval, and placed oppoſite to each other. Its flower is of one ſingle piece, charged with eight ſtamina, and ſupported upon the piſtil, which becomes an inſipid berry, reſembling in form that of the laurel. Its wood is white in the circumference, and yellow in the centre when the tree is old. This difference of colour conſtitutes two kinds of ſanders, both employed for the ſame purpoſes, and having equally a bitter taſte, and an aromatic ſmell. With the powder of this wood a paſte is prepared, with which the Chineſe, Indians, Perſians, Arabians, and Turks, anoint their bodies. It is likewiſe burnt in their houſes, and yields a fragrant and wholeſome ſmell. The greateſt quantity of this wood, to which a ſharp and attenuating virtue is aſcribed, remains in India. The red ſanders, though in leſs eſtimation, and leſs generally uſed, is ſent by preference into Europe. This is the produce of a different tree, which is common on the coaſt of Coromandel. Some travellers confound it with the wood of Caliatour, which is uſed in dyeing.

The ſantalum album, or white ſanders, is brought from the Eaſt Indies in billets about the thickneſs of a man's leg, of a pale whitiſh colour. It is that part of the yellow ſanders wood which lies next the bark. Great part of it, as met with in the ſhops, has no ſmell or taſte, nor any ſenſible quality that can recommend it to the notice of the phyſician.

The ſantalum album, or yellow ſanders, is the interior part of the wood of the ſame tree which furniſhes the former, is of a pale yellowiſh colour, of a pleaſant ſmell, and a bitteriſh aromatic taſte, accompanied with an agreeable kind of pungency. This elegant wood might undoubtedly be applied to valuable medical purpoſes, though at preſent very rarely uſed. Diſtilled with water, it yields a fragrant eſſential oil, which thickens in the cold into the conſiſtence of a balſam. Digeſted in pure ſpirit, it imparts a rich yellow tincture; which being committed to diſtillation, the ſpirit ariſes without bringing over any thing conſiderable of the flavour of the ſanders. The reſiduum contains the virtues of ſix times its weight of the wood. Hoffman looks upon this extract as a medicine of ſimilar virtues to ambergris; and recommends it as an excellent reſtorative in great debilities.

Santaren || Santeul.

SANTAREN, a handſome town of Portugal in Eſtremadura, ſeated on a mountain near the river Tajo, in a country very fertile in wheat, wine, and oil. They get in their harveſt here two months after they have ſown their corn. It was taken from the Moors in 1447. W. Long. 7. 45. N. Lat. 36. 12.

SANTAUGUSTINE. See Augustine.

SANTEN, a town of Germany, in the circle of Weſtphalia, and in the duchy of Cleves. It has a handſome church belonging to the Roman Catholics, wherein is an image of the Virgin Mary, which they pretend performs a great many miracles. Here the fine walks begin that run as far as Weſel, from which it is five miles diſtant to the north-weſt. E. Long. 6. 33. N. Lat. 51. 38.

SANTERRE, a ſmall territory of France, in Picardy; bounded on the north by Cambreſis, on the eaſt by Vermandois, on the weſt by Amienois, and on the ſouth by the river Somme. It is very fertile, and the capital town is Peronne.

SANTEUIL, or rather Santeul (John Baptiſt de), in Latin *Santolius Victorinus*, an excellent Latin poet, was born at Paris in 1630. Having finiſhed his ſtudies in Louis the Great's College, he applied himſelf entirely to poetry, and celebrated in his verſe the praiſes of ſeveral great men; by which he acquired univerſal applauſe. He enriched Paris with a great number of inſcriptions, which are to be ſeen on the public fountains, and the monuments conſecrated to poſterity. At length, ſome new hymns being to be compoſed for the Breviary of Paris, Claude Santeuil his brother, and M. Boſſuet, perſuaded him to undertake that work; and he ſucceeded in it with the greateſt applauſe. On which the order of Clugny deſiring him to compoſe ſome for their Breviary, he complied with their requeſt; and that order, out of gratitude, granted him letters of filiation, with an annual penſion. Santeuil was careſſed by all the learned men of his time; and had for his admirers the two princes of Condé, the father and ſon, from whom he frequently received favours. Louis XIV. alſo gave him a proof of his eſteem, by beſtowing a penſion upon him. He attended the duke of Bourbon to Dijon, when that prince went thither in order to hold the ſtates of Burgundy; and died there in 1697, as he was preparing to return to Paris. Beſides his Latin hymns, he wrote a great number of Latin poems, which have all the fire and marks of genius diſcoverable in the works of great poets.

To Santeuil we are indebted for many fine church-hymns, as above-mentioned. Santeuil read the verſes he made for the inhabitants of heaven with all the agitations of a demoniac. Deſpreaux ſaid he was the devil

devil whom God compelled to praiſe ſaints. He was among the number of poets whoſe genius was as impetuous as his muſe was decent.

La Bruyere has painted the character of this ſingular and truly original poet in the moſt lively colours. "Image a man of great facility of temper, complaiſant and docile, in an inſtant violent, choleric, paſſionate, and capricious. A man ſimple, credulous, playful, volatile, puerile; in a word, a child in gray hairs: but let him collect himſelf, or rather call forth his interior genius, I venture to ſay, without his knowledge or privacy, what ſallies! what elevation! what images! what latinity! Do you ſpeak of one and the ſame perſon, you will aſk? Yes, of the ſame; of Theodas, and of him alone. He ſhrieks, he jumps, he rolls upon the ground, he roars, he ſtorms; and in the midſt of this tempeſt, a flame iſſues that ſhines, that rejoices. Without a figure, he rattles like a fool, and thinks like a wiſe man. He utters truths in a ridiculous way; and, in an idiotic manner, rational and ſenſible things. It is aſtoniſhing to find good ſenſe diſcloſe itſelf from the boſom of buffoonery, accompanied with grimaces and contortions. What ſhall I ſay more? He does and he ſays better than he knows. Theſe are like two ſouls that are unacquainted with each other, which have each their turn and ſeparate functions. A feature would be wanting in this extraordinary portrait, if I omitted ſaying, that he has at once an inſatiable thirſt for praiſe, ready to throw himſelf at the mercy of the critics, and at the bottom ſo docile as to profit by their cenſure. I begin to perſuade myſelf that I have been drawing the portraits of two different perſons: it would not be impoſſible to find a third in Theodas; for he is a good man, a pleaſant man, an excellent man."

This poet ought not to be confounded with *Claude de Santeuil*, his brother, a learned eccleſiaſtic, who alſo wrote ſeveral hymns in the Paris Breviary under the name of *Santolius Maglioranus*, a name given him from his having lived a long time in the ſeminary of St Magliore at Paris, in quality of ſecular eccleſiaſtic. He was eſteemed not only for his poetical abilities, but alſo for his profound erudition and his exemplary piety. He died at Paris, in 1684, aged 57. He wrote ſeveral other pieces of poetry, beſides his hymns, which are printed with his brother's works.

SANTILLANE, a ſea-port town of Spain, in the province of Aſturias, of which it is the capital. It is ſeated on the ſea-coaſt, 55 miles eaſt of Oviedo, and 200 north-weſt of Madrid. W. Long. 4. 33. N. Lat. 43. 30.

SANTOLINA, LAVENDER-COTTON, in botany: A genus of the order of polygamia æqualis, belonging to the ſyngeneſia claſs of plants; and in the natural method ranking under the 49th order, *Compoſitæ*. The receptacle is paleaceous; there is no pappus; the calyx imbricated and hemiſpherical.

The moſt remarkable ſpecies are, 1. The chamæcyparifus, or common lavender-cotton, which has been long known in the Engliſh gardens; it was formerly titled *abrotanum fœmina*, or *female ſouthernwood*, and by the corruption of words was called *brotany* by the market-people: it grows naturally in Spain, Italy, and the warm parts of Europe. This hath a ligneous ſtalk, dividing into many branches, garniſhed with ſlender hoary leaves, that are four ways indented, and have a rank, ſtrong, odour when handled. The branches are terminated by a ſingle flower, compoſed of many hermaphrodite florets, which are fiſtular, cut into five parts at the top, of a ſulphur colour, and are included in one common ſcaly empalement, having no borders or rays. Theſe are ſucceeded by ſmall, oblong, ſtriated ſeeds, which are ſeparated by ſcaly chaff, and ripen in the empalement; the plants love a dry ſoil and a ſheltered ſituation. 2. The villoſa, with woolly leaves, has a ſhrubby ſtalk, which branches out like the former, but the plants ſeldom grow ſo tall. The branches are garniſhed very cloſely below with leaves ſhaped like thoſe of the other ſort, but ſhorter, thicker, and whiter; the flowers are much larger, and the brims of the florets are more reflexed; they are of a deeper ſulphur colour than the other. It grows naturally in Spain. 3. The decumbens, with linear leaves, is of lower ſtature than either of the former, ſeldom riſing more than 15 or 16 inches high. The branches ſpread horizontally near the ground, and are garniſhed with ſhorter leaves than either of the former, which are hoary and finely indented; the ſtalks are terminated by ſingle flowers, of a bright yellow colour, which are larger than thoſe of the firſt ſort. 4. The virens, with very long linear leaves, riſes higher than either of the former. The branches are more diffuſed; they are ſlender, ſmooth, and garniſhed with very narrow long leaves, which are of a deep green colour, but two ways indented; the ſtalks are ſlender, naked towards the top, and terminated by ſingle flowers of a gold colour. 5. The roſmarinifolia, with linear entire leaves, hath ſhrubby ſtalks, which riſe about three feet high, ſending out long ſlender branches, garniſhed with ſingle linaer leaves of a pale-green colour. The ſtalks are terminated by large, ſingle, globular flowers, of a pale ſulphur colour. 6. The minor, with linear obtuſe leaves, is ſomewhat like the fifth; but the branches are ſhorter, thicker, and cloſer garniſhed with leaves, which come out in cluſters. The flower-ſtalks are ſparſedly diſpoſed, and have leaves to their top; the flowers are ſmall, and of a yellow colour. 7. The chamæmelifolia, with obtuſe woolly leaves, hath ſhrubby ſtalks, which riſe three feet high, garniſhed with broader leaves than either of the former, whoſe indentures are looſer, but double; they are hoary, and when bruiſed have an odour like chamomile. The leaves are placed pretty far aſunder, and the ſtalks are garniſhed with them to the top. The ſtalks are divided likewiſe at the top into two or three foot-ſtalks, each ſuſtaining one pretty large ſulphur-coloured flower.

All theſe plants may be cultivated ſo as to become ornaments to a garden, particularly in ſmall boſquets of ever-green ſhrubs, where, if they are artfully intermixed with other plants of the ſame growth, and placed in the front line, they will make an agreeable variety; eſpecially if care be taken to trim them twice in a ſummer, to keep them within bounds, otherwiſe their branches are apt to ſtraggle, and in wet weather to be borne down and diſplaced, which renders them unſightly; but when they are kept in order, their hoary and different-coloured leaves will have a pretty effect in ſuch plantations.—They may be propagated by planting ſlips or cuttings during the ſpring, in a border

Santorini ‖ Sap.

border of light frefh earth, but muft be watered and fhaded in hot dry weather, until they have taken root; after which they will require no farther care but to keep them clean from weeds till autumn, when they fhould be tranfplanted where they are deftined to remain: but if the ground is not ready by that time to receive them, it will be proper to let them remain in the border until fpring; for if they are tranfplanted late in autumn, they are liable to be deftroyed by cold in winter.

SANTORINI, an ifland of the Archipelago, to the north of Candia, and to the fouth-weft of Nauplia. It is eight miles in length, and near as much in breadth, and almoft covered with pumice-ftone, whence the foil in general muft be dry and barren; it is, however, greatly improved by the labour and induftry of the inhabitants, who have turned it into a garden. It affords a great deal of barley, plenty of cotton, and large quantities of wine. Fruit is fcarce except figs; and they have neither oil nor wood. The inhabitants are all Greeks, and are about 10,000 in number. Pyrgos is the capital town, and there are feveral little towns and villages. They have but one fpring in the ifland, for which reafon they preferve the rain-water in ciftern. Though fubject to the Turks, they choofe their own magiftrates. E. Long. 25. 5. N. Lat. 39. 10.

SANZIO (Raphael). See RAPHAEL.

SAO, a territory, called a kingdom, of Africa, on the gold-coaft of Guinea, hardly two miles in length along the fhore. It produces abundance of Indian corn, yams, potatoes, palm-wine, and oil. The inhabitants are very treacherous, and there is no dealing with them without a great deal of caution. It contains feveral villages, of which Sabo is the principal; and the Dutch have a fort here called *Naffau*.

SAONE, a conſiderable river of France, which has its fource in mount Vofgue, near Darney; runs through the Franche Comte Burgundy, Beaujolois; and falls into the Rhone at Lyons. It paffes by Gray, Chalons, and Macon.

SAP, the juice found in vegetables.

We obferved, when treating of PLANTS, that it has been long difputed whether the fap of plants be analogous to the blood of animals, and circulates in the fame manner. We alfo mentioned the conclufions that Dr Hales drew from his numerous experiments, which were all in oppofition to the doctrine that the fap circulates. As the fubject is curious and interefting, and as additional light has been thrown upon it of late years, we wifh to communicate it to our readers as fully as our limits will permit.

As the vegetable œconomy is ftill but imperfectly underftood, and experiments made for tracing the motion of the fap may lead to important difcoveries, we are happy to find, that of late years this fubject has been again revived. Dr Walker, profeffor of Natural Hiftory in the univerfity of Edinburgh, has publifhed in the 1ft volume of the Philofophical Tranfactions of Edinburgh an account of a courfe of very accurate and ingenious experiments, accompanied with obfervations and conclufions made with a caution which inſpires confidence, and is indeed worthy of a difciple of Bacon. He is the firft perfon, as far as we know, who thought of comparing the thermometer with the motion of the fap.

Sap.

It is well known that in the fpring vegetables contain a great quantity of fap; and there are fome trees, as, the birch and plane, which, if wounded, will difcharge a great portion of it. Whence is this moifture derived? Whether is it imbibed from the atmofphere, or does it flow from the foil through the roots? Thefe are the queftions which require firft to be anfwered; and Dr Walker's experiments enable us to anfwer them with confidence.

He felected a vigorous young birch, 30 feet high and 26 inches in circumference at the ground. He bored a hole juft above the ground on the 1ft of February, and cut one of its branches at the extremity. He repeated this every fecond day; but no moifture appeared at either of the places till the 5th of May, when a fmall quantity flowed on making an incifion near the ground. He then cut 21 incifions in the trunk of the tree, on the north fide, at the diftance of a foot from one another, and reaching from the ground to the height of 20 feet. The incifions were folid triangles, each fide being an inch long and an inch deep, and penetrating through the bark and wood. Dr Walker vifited the tree almoft every day for two months, and marked exactly from which of the incifions the fap flowed. He obferved that it flowed from the loweft incifion firft, and gradually afcended to the higheft. The following table will fhow the progrefs of the fap upwards, and its correfpondence with the thermometer.

The firft column is the day of the month on which the obfervation was made; the fecond expreffes the number of incifions from which the fap flowed on the day of the month oppofite; and the third column the degree of the thermometer at noon. Some days are omitted in March, as the incifions, though made on th 5th, did not bleed till the 11th. Some days are alfo paffed over in April, becaufe no obfervation was made on account of rain.

March.	N. of In.	Ther. Noon.	March.	N. of In.	Ther. Noon.
5	—	46	30	8	50
11	2	49	31	7	62
12	2	49			
13	1	44	April 2	7	46
14	4	48	4	10	53
15	5	52	7	11	49
16	5	47	8	11	48
17	4	44	9	12	50
18	5	47	10	13	53
19	6	48	11	13	45
20	5	44	12	13	44
21	7	48	13	13	43
22	7	45	14	14	55
23	8	46	15	14	49
24	9	47	16	16	56
25	9	42	18	16	50
26	7	39	19	17	54
27	8	45	20	19	56
28	8	49	21	20	54
29	8	46	22	21	52

Dr Walker found that the fap afcends through the wood, and ſtill more copioufly between the wood and the bark; but none could be perceived afcending through the pith or the bark. He found alfo, that when the thermometer at noon is about 49, or between 46 and 50, the fap rifes about one foot in 24 hours; that when the thermometer it about 45 at noon, it afcends about

one

Sap. Sapindus.

one foot in two days; and that it does not aſcend at all unleſs the mid-day heat be above 40. He obſerved that it moves with more velocity through young than through old branches. In one young branch it moved through ſeven feet in one day, the thermometer being at 49, while it moved in the trunk of the tree only ſeven feet in ſeven days. Dr Walker has thus explained the reaſon why the buds on the extremities of branches unfold firſt; becauſe they are placed on the youngeſt wood, to which the ſap flows moſt abundantly.

The effects produced by the motion of the ſap deſerve to be attended to. In thoſe parts to which it has mounted, the bark eaſily ſeparates from the wood, and the ligneous circles may, without difficulty, be detached from one another. The buds begin to ſwell and their ſcales to ſeparate, while thoſe branches to which the ſap has not aſcended remain cloſely folded. When the ſap has reached the extremities of the branches, and has thus pervaded the whole plant, it is ſoon covered with opening buds and ceaſes to bleed. The bleeding ceaſes firſt in the upper parts of the tree, and in the lower parts ſucceſſively downwards, and the wood becomes dry. An inverted branch flows more copiouſly when cut than thoſe which are erect. This is a proof that the aſcent of the ſap is not occaſioned by capillary attraction, for water which has riſen in a ſmall glaſs tube by this attraction will not deſcend when the tube is inverted.

It is evident that there is an intimate connection between heat and the aſcent of the ſap. It did not begin to flow till the thermometer ſtood at a certain point: when it fell below 40, it was arreſted in its progreſs. The ſouth ſide of the tree, when the ſun was bright, bled more profuſely than the north ſide; and at ſun-ſet the inciſions at the top ceaſed to bleed, where it was expoſed moſt to the cold air, while it ſtill continued to flow from the inciſions next to the ground; the ground retaining its heat longer than the air.

Sap, in ſieges, is a trench, or an approach made under cover of 10 or 12 feet broad, when the beſiegers come near the place, and the fire from the garriſon grows ſo dangerous that they are not able to approach uncovered.—There are ſeveral ſorts of ſaps; the ſingle, which has only a ſingle parapet; the double, having one on each ſide; and the flying, made with gabions, &c. In all ſaps traverſes are left to cover the men.

SAPINDUS, the SOAP-BERRY TREE, in botany: A genus of the digynia order, belonging to the octandria claſs of plants; and in the natural method ranking under the 23d order, *Tribilatæ*. The calyx is tetraphyllous; the petals four; the capſules are fleſhy, connate, and ventricoſe.

The ſpecies are four, the ſaponaria, ſpinoſus, trifoliatus, and chinenſis. The ſaponaria, with winged leaves, grows naturally in the iſlands of the Weſt Indies, where it riſes with a woody ſtalk from 20 to 30 feet high, ſending out many branches garniſhed with winged leaves compoſed of ſeveral pair of ſpear-ſhaped lobes. The midrib has a membranaceous or leafy border, running on each ſide from one pair of lobes to the other, which is broadeſt in the middle between the lobes; the flowers are produced in looſe ſpikes at the end of the branches; they are ſmall and white, ſo make no great appearance. Theſe are ſucceeded by oval berries as large as middling cherries, ſometimes ſingle, at others, two, three, or four are joined together; theſe have a ſaponaceous ſkin or cover, which incloſes a very ſmooth roundiſh nut of the ſame form, of a ſhining black when ripe. The ſkin or pulp which ſurrounds the nuts is uſed in America to waſh linen; but it is very apt to burn and deſtroy it if often uſed, being of a very acrid nature.

Saponaria ‖ Sapphira.

Theſe plants are propagated by ſeeds; they muſt be put into ſmall pots, and plunged into a hot-bed of tanners' bark. In five or ſix weeks the plants will appear, when the glaſſes of the hot-bed ſhould be raiſed every day in warm weather, to admit freſh air to the plants. In three weeks or a month after the plants appear, they will be fit to be tranſplanted, when they muſt be ſhaken out of the pots, and carefully parted, ſo as not to injure their roots, and each planted into a ſeparate ſmall pot, and plunged into the hot-bed again, obſerving to ſhade them from the ſun until they have taken new root; after which time they muſt have free air admitted to them every day when the weather is warm, and will require to be frequently watered.

SAPONARIA, SOPEWORT, in botany: A genus of the digynia order, belonging to the decandria claſs of plants; and in the natural method ranking under the 22d order, *Caryophyllea*. The calyx is monophyllous and naked; there are five unguiculated petals; the capſule is oblong and unilocular.

There are eight ſpecies, the officinalis, vaccaria, cretica porrigens, illyrica, ocymoides, orientalis, and lutea. The officinalis, which is a Britiſh plant, has a creeping root, ſo that in a ſhort time it would fill a large ſpace of ground. The ſtalks are about two feet high, and of a purpliſh colour. The footſtalks of the flowers ariſe from the wings of the leaves oppoſite; they ſuſtain four, five, or more purple flowers each; which have generally two ſmall leaves placed under them. The ſtalk is alſo terminated by a looſe bunch of flowers growing in form of an umbel; they have each a large ſwelling cylindrical empalement, and five broad obtuſe petals, which ſpread open, of a purple colour. Theſe are ſucceeded by oval capſules, with one cell filled with ſmall ſeeds.—The decoction of this plant is uſed to cleanſe and ſcour woollen cloths: the poor people in ſome countries uſe it inſtead of ſoap for waſhing; from which uſe it had its name.

SAPOR, TASTE. See TASTE, and ANATOMY, n°. 139.

SAPOTA, PLUM, in botany. See ACHRAS.

SAPPERS, are ſoldiers belonging to the royal artillery, whoſe buſineſs it is to work at the ſaps, for which they have an extraordinary pay. A brigade of ſappers generally conſiſts of eight men, divided equally into two parties; and whilſt one of theſe parties is advancing the ſap, the other is furniſhing the gabions, faſcines, and other neceſſary implements. They relieve each other alternately.

SAPPHIRA, was the wife of a rich merchant in Gueldres, and equally diſtinguiſhed for her beauty and her virtue. Rhinſauld, a German officer, and governor of the town of Gueldres, fell in love with her; and not being able to ſeduce her either by promiſes or preſents, he impriſoned her huſband, pretending that he kept up a traiterous correſpondence with the enemies of the ſtate. Sapphira yielded to the paſſion of the governor

Sapphire. vernor in order to relieve her husband from chains; but private orders had already been given to put him to death. His unhappy widow, overwhelmed with grief, complained to Charles duke of Burgundy. He ordered Rhinsauld to marry her, after having made over to her all his possessions. As soon as the deed was signed, and the marriage over, Charles commanded him to be put to death. Thus the children of a wife whom he had seduced, and of a husband whom he had murdered, became lawful heirs to all his wealth.

SAPPHIRE, a genus of precious stones, of a blue colour, and the hardest of all except the ruby and diamond. They are found in the same countries with the ruby; also in Bohemia, Alsace, Siberia, and Auvergne. M. Rome de l'Isle mentions one found at Auvergne, which appeared quite green or blue according to the position in which it was viewed. Cronstedt, however, informs us, that the blue fluor spars are frequently met with in collections under the name of *sapphires*; and it is certain from Pliny, B. 37. chap. 9. that the sapphire of the ancients was our lapis lazuli. They are seldom found of a deep blue colour throughout, or free from parallel veins; and when they are but slightly tinged, they are named *white sapphires*. The late unfortunate king of France had one with a stripe of fine yellow topaz in the middle. Some are found half green and half red, and are foliated like the ruby. The fine hard sapphires, called by the jewellers *oriental*, are of the same nature with the ruby and topaz, excepting the mere circumstance of colour. They are commonly in two oblong hexagon pyramids, joined at their base, and pointed at top; sometimes also in hexagonical columns.

The finest sapphires, like most of the gems, come from the East Indies. Russia does not produce the sapphire. In Scotland they are found of a hardness and lustre equal to the oriental, both light and deep coloured, at Benachie, and Invercauld, Aberdeenshire; Portsoy in Banffshire, and many other places. Mr Deuchar, seal-engraver in Edinburgh, has in his possession a beautiful sapphire, which was found in a double crystal. On one of these is cut a head, which was effected with the greatest difficulty, on account of its hardness; the other is cut into facets, and has a fine water, and great brilliancy.

The specific gravity of these precious stones, according to Bergman, is from 3,650 to 3,940. According to others the specific gravity of the oriental sapphires is 3,994; that of the Brasilian 3,1307; and of those from Puy in Auvergne, 4,0769. When powdered, they are fusible with borax, or microcosmic salt, into a transparent glass; and the same thing happens on treating them with magnesia alba. They are said to lose their colour by fire, and to become so hard and transparent as sometimes to pass for diamonds; but Mr Achard found this to be a mistake, and that the true sapphires are not in the least altered either in colour, hardness, or weight, by the most intense fire. Those of Puy in Auvergne, however, though by their colour and hardness they seem to approach the oriental sapphires, lose both their colour and transparency in the fire, becoming black, and even vitrifying, which plainly shows them to be of a different kind. Engestroom informs us, that the sapphires, in their rough or native state, generally crystallize in two oblong hexagonal pyramids pointed at top, and joined at their bases, but are sometimes found of an hexagonal or columnar form.—A good sapphire of ten carats is valued at 50 guineas; if it weighs 20 carats, it is valued at 200 guineas; and, if under ten carats, its value may be found by multiplying the carat at 10s. 6d. by the square of its weight.—Sapphires are preferable to common rubies for jewelling watches, on account of the homogeneous hardness of their substance; some red stones resembling rubies being met with, which are not uniformly hard. Sappho.

SAPPHO, a famous poetess of antiquity, who for her excellence in her art has been called the *Tenth Muse*, was born at Mitylene in the isle of Lesbos, about 610 years before Christ. She was contemporary with Stesichorus and Alcæus; which last was her countryman, and as some think her suitor. A verse of this poet, in which he insinuates to her his passion, is preserved in Aristotle, *Rhet. lib.* i. *cap.* 9. together with the fair damsel's answer.

ALC. I fain to Sappho would a wish impart,
But fear locks up the secret in my heart.
SAP. Thy downcast looks, respect, and timid air,
Too plain the nature of thy wish declare.
If lawless, wild, inordinate desire,
Did not with thoughts impure thy bosom fire,
Thy tongue and eyes, by innocence made bold,
Ere now the secret of thy soul had told.

M. la Fevre observes, that Sappho was not in her usual good-humour when she gave so cold an answer to a request, for which, at another time, perhaps she would not have waited. It has been thought, too, that Anacreon was one of her lovers, and his editor Barnes has taken some pains to prove it: but chronology will not admit this; since, upon inquiry, it will be found that Sappho was probably dead before Anacreon was born. Of the numerous poems this lady wrote, there is nothing remaining but some small fragments, which the ancient scholiasts have cited; a hymn to Venus, preserved by Dionysius of Halicarnassus; and an ode to one of her mistresses †: which last piece confirms a tradition delivered down from antiquity, that her amorous passion extended even to persons of her own sex, and that she was willing to have her mistresses as well as her gallants. † See Poetry n° 122.

Ovid introduces her making a sacrifice to Phaon, one of her male paramours; from which we learn, that Sappho's love for her own sex did not keep her from loving ours. She fell desperately in love with Phaon, and did all she could to win him; but in vain: upon which she threw herself headlong from a rock, and died. It is said that Sappho could not forbear following Phaon into Sicily, whither he retired that he might not see her; and that during her stay in that island she probably composed the hymn to Venus, still extant, in which she begs so ardently the assistance of that goddess. Her prayers, however, proved ineffectual: Phaon was cruel to the last degree. The unfortunate Sappho was forced to take the dreadful leap; she went to the promontory Leucas, and threw herself into the sea. The cruelty of Phaon will not surprise us so much, if we reflect, that she was a widow (for she had been married to a rich man in the isle of Andros, by whom she had a daughter, named *Cleis*); that she had never been hand-

Saraband

Saracens

Saranne || Sarcophagus.

ſome; that ſhe had obſerved no meaſure in her paſſion to both ſexes; and that Phaon had long known all her charms. She was, however, a very great wit, and for that alone deſerves to be remembered. The Mitylenians held her merit in ſuch high eſteem, that they paid her ſovereign honours after her death, and ſtamped their money with her image. The Romans afterwards erected a noble ſtatue of porphyry to her; and in ſhort, ancients as well as moderns have done honour to her memory. Voſſius ſays, that none of the Greek poets excelled Sappho for ſweetneſs of verſe; and that ſhe made Archilochus the model of her ſtyle, but at the ſame time took care to ſoften the ſeverity of his expreſſion. It muſt be granted, ſays Rapin, from what is left us of Sappho, that Longinus had great reaſon to extol the admirable genius of this woman; for there is in what remains of her ſomething delicate, harmonious, and impaſſioned to the laſt degree.

SARABAND, a muſical compoſition in the triple time, the motions of which are ſlow and ſerious.

Saraband is alſo a dance to the ſame meaſure, which uſually terminates when the hand that beats the time falls; and is otherwiſe much the ſame as the minuet.

The ſaraband is ſaid to be originally derived from the Saracens, and is uſually danced to the ſound of the guitar or caſtanettes.

SARACA, in botany; a genus of the hexandria order, belonging to the diadelphia claſs of plants.—There is no calyx: the corolla is funnel-ſhaped and quadrifid; the filaments are on each ſide the throat of the corolla; the legumen is pedicellated.

SARACENS, the inhabitants of Arabia; ſo called from the word *ſara*, which ſignifies a deſert, as the greateſt part of Arabia is; and this being the country of Mahomet, his diſciples were called Saracens.

SARAGOSSA, a city of Spain, in the kingdom of Arragon, with an archbiſhop's ſee, an univerſity, and a court of inquiſition. It is ſaid to have been built by the Phœnicians; and the Romans ſent a colony here in the reign of the emperor Auguſtus, whence it had the name of *Cæſar Auguſtus*, which by corruption has been changed into Saragoſſa. It is a large, handſome, and well-built town. The ſtreets are long, broad, well-paved, and very clean, and the houſes from three to ſix ſtories high. It is adorned with many magnificent buildings; and they reckon 17 large churches, and 14 handſome monaſteries, not to mention others leſs conſiderable. The river Ebro runs acroſs the place, dividing it into two; and on its banks is a handſome quay, which ſerves for a public walk. The Holy-ſtreet is the largeſt, and ſo broad that it may be taken for a ſquare; and here they have their bull-fights: in this ſtreet there are ſeveral noblemen's families, particularly that of the viceroy. The convents are handſome and richly adorned, as well as the churches. The cathedral church is a ſpacious building, after the Gothic taſte; but the fineſt church is that of Nueſtra Signora del Pilar, ſeated on the ſide of the Ebro, and is a place of the greateſt devotion in Spain. They tell us the Virgin appeared to St James, who was preaching the goſpel, and left him her image, with a handſome pillar of jaſper: it is ſtill in this church which they pretend is the firſt in the world built to her honour. This image ſtands on a marble pillar, with a little Jeſus in her arms; but the place is ſo dark, that it cannot be ſeen without the aſſiſtance of lamps, which are 50 in number, and all of ſilver. There are alſo chandeliers and baluſtrades of maſſy ſilver. The ornaments of this image are the richeſt that can be imagined, her crown being full of precious ſtones of an ineſtimable price; in ſhort, there is ſcarce any thing to be ſeen but gold and jewels, and a vaſt number of people come in pilgrimage hither. The town-houſe is a ſumptuous ſtructure, adorned with fine columns: in the hall are the pictures of all the kings of Arragon; and in a corner of it St George on horſeback, with a dragon of white marble under him. It is ſeated in a very large plain, where the Ebro receives two other rivers; and over it are two bridges, one of ſtone and the other of wood, which laſt has been thought the moſt beautiful in Europe. A victory was obtained here over the French and Spaniards in 1710, but it was abandoned by the allies ſoon after. It is 97 miles weſt by north of Tarragona, 137 weſt of Barcelona, and 150 north-eaſt of Madrid. W. Long. 0. 48. N. Lat. 41. 47.

SARANNE. See Lilium.

SARCASM, in rhetoric, a keen bitter expreſſion which has the true point of ſatire, by which the orator ſcoffs and inſults his enemy: ſuch as that of the Jews to our Saviour; "He ſaved others, himſelf he cannot ſave."

SARCOCELE, in ſurgery, a ſpurious rupture or hernia, wherein the teſticle is conſiderably tumefied or indurated, like a ſcirrhous, or much enlaged by a fleſhy excreſcence, which is frequently attended with acute pains, ſo as to degenerate at laſt into a cancerous diſpoſition. See Surgery.

SARCOCOLLA, a concrete juice brought from Perſia and Arabia, in ſmall whitiſh-yellow grains, with a few of a reddiſh and ſometimes of a deep red colour mixed with them; the whiteſt tears are preferred, as being the freſheſt: its taſte is bitter, accompanied with a dull kind of ſweetneſs. This drug diſſolves in watery liquors, and appears chiefly to be of the gummy kind, with a ſmall admixture of reſinous matter. It is principally celebrated for conglutinating wounds and ulcers (whence its name σαρκοκολλα *fleſh-glue*); a quality which neither this nor any other drug has any juſt title to.

SARCOLOGY, is that part of anatomy which treats of the ſoft parts, viz. the muſcles, inteſtines, arteries, veins, nerves, and fat.

SARCOMA, in ſurgery, denotes any fleſhy excreſcence.

SARCOPHAGUS, in antiquity, a ſort of ſtone coffin or grave, wherein the ancients laid thoſe they had not a mind to burn.

The word, as derived from the Greek, literally ſignifies *fleſh-eater*; becauſe at firſt they uſed a ſort of ſtone for the making of tombs, which quickly conſumed the bodies. See the following article.

Sarcophagus, or *Lapis Aſſius*, in the natural hiſtory of the ancients, a ſtone much uſed among the Greeks in their ſculptures, is recorded to have always perfectly conſumed the fleſh of human bodies buried in it in forty days. This property it was much famed for, and all the ancient naturaliſts mention it. There was another very ſingular quality alſo in it, but whether in all, or only in ſome peculiar pieces of it, is not known: that is, its turning into ſtone any thing that was put into veſſels made of it. This is recorded only

Sarcophagus || Sardanapalus.

only by Mutianus and Theophraſtus, except that Pliny had copied it from theſe authors, and ſome of the later writers on theſe ſubjects from him. The account Mutianus gives of it is, that it converted into ſtone the ſhoes of perſons buried in it, as alſo the utenſils which it was in ſome places cuſtomary to bury with the dead, particularly thoſe which the perſon while living moſt delighted in. The utenſils this author mentions, are ſuch as muſt have been made of very different materials; and hence it appears that this ſtone had a power of conſuming not only fleſh but that its petrifying quality extended to ſubſtances of very different kinds. Whether ever it really poſſeſſed this laſt quality has been much doubted; and many, from the ſeeming improbability of it, have been afraid to record it. What has much encouraged the general diſbelief of it is, Mutianus's account of its taking place on ſubſtances of very different kinds and textures; but this is no real objection, and the whole account has probably truth in it. Petrifactions in thoſe early days might not be diſtinguiſhed from incruſtations of ſparry and ſtony matter on the ſurfaces of bodies only, as we find they are not with the generality of the world even to this day; the incruſtations of ſpar on moſſes and other ſubſtances in ſome of our ſprings, being at this time called by many *petrified moſs*, &c. and incruſtations like theſe might eaſily be formed on ſubſtances encloſed in veſſels made of this ſtone, by water paſſing through its pores, diſlodging from the common maſs of the ſtone, and carrying with it particles of ſuch ſpar as it contained; and afterwards falling in repeated drops on whatever lay in its way, it might again depoſit them on ſuch ſubſtances in form of incruſtations. By this means, things made of ever ſo different matter, which happened to be incloſed, and in the way of the paſſage of the water, would be equally incruſted with and in appearance turned into ſtone, without regard to the different configuration of their pores and parts.

The place from whence the ancients tell us they had this ſtone was Aſſos, a city of Lycia, in the neighbourhood of which it was dug; and De Boot informs us, that in that country, and in ſome parts of the Eaſt, there are alſo ſtones of this kind, which, if tied to the bodies of living perſons, would in the ſame manner conſume their fleſh. *Hill's Notes on Theophraſtus*, p. 14.

SARCOTICS, in ſurgery, medicines which are ſuppoſed to generate fleſh in wounds.

SARDANAPALUS, the laſt king of Aſſyria, whoſe character is one of the moſt infamous in hiſtory. He is ſaid to have ſunk ſo far in depravity, that, as far as he could, he changed his very ſex and nature. He clothed himſelf as a woman, and ſpun amidſt companies of his concubines. He painted his face, and behaved in a more lewd manner than the moſt laſcivious harlot. In ſhort, he buried himſelf in the moſt unbounded ſenſuality, quite regardleſs of ſex and the dictates of nature. Having grown odious to all his ſubjects, a rebellion was formed againſt him by Arbaces the Mede and Beleſis the Babylonian. They were attended, however, with very bad ſucceſs at firſt, being defeated with great ſlaughter in three pitched battles. With great difficulty Beleſis prevailed upon his men to keep the field only five days longer; when they were joined by the Bactrians, who had come to the aſſiſtance of Sardanapalus, but had been prevailed upon to renounce their allegiance to him. With this reinforcement they twice defeated the troops of Sardanapalus, who ſhut himſelf up in Nineveh the capital of his empire. The city held out for three years; at the end of which, Sardanapalus finding himſelf unable to hold out any longer, and dreading to fall into the hands of an enraged enemy, retired into his palace, in a court of which he cauſed a vaſt pile of wood to be raiſed; and heaping upon it all his gold and ſilver, and royal apparel, and at the ſame time incloſing his eunuchs and concubines in an apartment within the pile, he ſet fire to it, and ſo deſtroyed himſelf and all together. Sardinia.

SARDINIA, an iſland of the Mediterranean, bounded by the ſtrait which divides it from Corſica on the north; by the Tuſcan ſea, which flows between this iſland and Italy, on the eaſt; and by other parts of the Mediterranean ſea on the ſouth and weſt. It is about 140 miles in length and 70 in breadth, and contains 420,000 inhabitants. The revenue ariſes chiefly from a duty upon ſalt, and is barely ſufficient to defray the expences of government; but it certainly might be conſiderably augmented, as the ſoil produces wine, corn, and oil, in abundance. Moſt of the ſalt that is exported is taken by the Danes and Swedes; the Engliſh formerly took great quantities for Newfoundland, but having found it more convenient to procure it from Spain and Portugal, they now take little or none. A profitable tunny fiſhery is carried on at the ſouth-weſt part of the iſland, but it is monopolized by the Duke de St Pierre, and a few more people, who happen to be proprietors of the adjoining land. Wild boars abound in the hilly parts of the iſland, and here are ſome few deer, not ſo large as thoſe in Britain, but in colour and make exactly the ſame. Beeves and ſheep are alſo common, as well as horſes. Sutherland's Tour up the Straits.

The feudal ſyſtem ſtill ſubſiſts in a limited degree, and titles go with their eſtates, ſo that the purchaſer of the latter inherits the former. The regular troops ſeldom exceed 2000 men; but the militia amount to near 26,000, of whom 11,000 are cavalry. Their horſes are ſmall, but uncommonly active. It would be more eaſy to beat them in a charge than to overtake them in a march. The country people are generally armed; but notwithſtanding their having been ſo long under the Spaniſh and Italian government, aſſaſſinations are by no means frequent; and yet by the laws of the country, if a man ſtabs another without premeditated malice, within four hours after quarrelling with him, he is not liable to be hanged. On the other hand, the church affords no protection to the guilty. The Sardinians are not at all bigoted; and, next to the Spaniards, the Engliſh are their favourites. The whole iſland is ſubject to the Duke of Savoy, who enjoys the title of king of Sardinia. See CAGLIARI.

There is in this iſland a pleaſing variety of hills and valleys, and the ſoil is generally fruitful; but the inhabitants are a very ſlothful generation, and cultivate but a little part of it. On the coaſt there is a fiſhery of anchovies and coral, of which they ſend large quantities to Genoa and Legborn. This iſland is divided into two parts; the one, called *Capo-di Cagliari*, lies to the ſouth; and the other *Capo-di-Logury*, which is ſeated to the north. The principal towns are Cagliari the capital, Oriſtagno, and Saſſari.

SARDIS, or SARDES, now called *Sardo* or *Sart*, is an ancient town of Natolia in Aſia, about 40 miles eaſt of Smyrna. It was much celebrated in early antiquity, was enriched by the fertility of the ſoil, and had been the capital of the Lydian kings. It was ſeated on the ſide of mount Tmolus; and the citadel, placed on a lofty hill, was remarkable for its great ſtrength. It was the ſeat of king Creſus, and was in his time taken by Cyrus; after which the Perſian ſatrapas or commandant reſided at Sardis as the emperor did at Suſa. The city was alſo taken, burnt, and then evacuated by the Ionians in the time of Darius, and the city and fortreſs ſurrendered on the approach of Alexander after the battle of Granicus. Under the Romans Sardis was a very conſiderable place till the time of Tiberius Cæſar, when it ſuffered prodigiouſly by an earthquake. The munificence of the emperor, however, was nobly exerted to repair the various damages it then ſuſtained. Julian attempted to reſtore the heathen worſhip in the place. He erected temporary altars where none had been left, and repaired the temples if any veſtiges remained. In the year 400 it was plundered by the Goths, and it ſuffered conſiderably in the ſubſequent troubles of Aſia. On the incurſion of the Tartars in 1304, the Turks were permitted to occupy a portion of the citadel, ſeparated by a ſtrong wall with a gate, and were afterwards murdered in their ſleep. The ſite of this once noble city is now green and flowery, the whole being reduced to a poor village, containing nothing but wretched huts. There are, however, ſome curious remains of antiquity about it, and ſome ruins which diſplay its ancient grandeur. See *Chandler's Travels in Aſia Minor*, p. 251, &c.

There is in the place a large caravanſary, where travellers may commodiouſly lodge. The inhabitants are generally ſhepherds, who lead their ſheep into the fine paſtures of the neighbouring plain. The Turks have a moſque here, which was a Chriſtian church, at the gate of which there are ſeveral columns of poliſhed marble. There are a few Chriſtians, who are employed in gardening. E. Long. 28. 5. N. Lat. 37. 51.

SARDONIUS RISUS, *Sardonian Laughter*. A convulſive involuntary laughter; thus named from the herb ſardonia, which is a ſpecies of ranunculus, and is ſaid to produce ſuch convulſive motions in the cheeks as reſemble thoſe motions which are obſerved in the face during a fit of laughter. This complaint is ſometimes ſpeedily fatal. If the ranunculus happens to be the cauſe, the cure muſt be attempted by means of a vomit, and frequent draughts of hydromel with milk.

SARDONYX, a precious ſtone conſiſting of a mixture of the chalcedony and carnelian, ſometimes in ſtrata, but at other times blended together. It is found, 1. Striped with white and red ſtrata, which may be cut in *cameos* as well as the onyx. 2. White with red dentritical figures, greatly reſembling the mocha-ſtone; but with this difference, that the figures in the ſardonyx are of a red colour, in the other black. There is no real difference, excepting in the circumſtance of hardneſs, between the onyx, carnelian, chalcedony, ſardonyx, and agate, notwithſtanding the different names beſtowed upon them. Mongez informs us, that the yellow, or orange coloured agates, with a wavy or undulating ſurface, are now commonly called ſardonyx. See CARNELIAN and ONYX.

SARGUS, in ichthyology. See SPARUS.

SARIMPATAM, a country of Indoſtan, lying at the back of the dominions of the Samorin of Malabar, and which, as far as we know, was never ſubdued by any foreign power. Mr Groſe relates, that "it has been conſtantly a maxim with the inhabitants of this country never to make any but a defenſive war; and even then, not to kill any of their adverſaries in battle, but to cut off their noſes. To this ſervice the military were peculiarly trained up, and the dread of the deformity proved ſufficiently ſtrong to keep their neighbours, not much more martial than themſelves, from effectually attacking them."

SARMENTOSÆ (from *ſarmentum*, a long ſhoot like that of a vine); the name of the 11th claſs in Linnæus's Fragments of a Natural Method, conſiſting of plants which have climbing ſtems and branches, that, like the vine, attach themſelves to the bodies in their neighbourhood for the purpoſe of ſupport. See BOTANY, p. 459.

SAROTHRA, in botany: A genus of the trigynia order, belonging to the pentandria claſs of plants; and in the natural method ranking under the 20th order, *Rotaceæ*. The corolla is pentapetalous; the capſule unilocular, trivalved, and coloured.

SARPLAR *of* WOOL, a quantity of wool, otherwiſe called a *pocket* or *half ſack*; a ſack containing 80 tod; a tod two ſtone; and a ſtone 14 pounds.—In Scotland it is called *ſarpliath*, and contains 80 ſtone.

SARRACONIA, in botany: A genus of the monogynia order, belonging to the polyandria claſs of plants; and in the natural method ranking under the 54th order *Miſcellaneæ*. The corolla is pentapetalous; the calyx is double, and triphyllous below; pentaphyllous above; the capſule quinquelocular; the ſtyle has a ſtigma of the form of a ſhield.

SARSAPARILLA, in botany. See SMILAX.

SARTORIUS, in ANATOMY. See there, *Table of the Muſcles*.

OLD SARUM, in Wilts, about one mile north of New Sarum or Saliſbury, has the ruins of a fort which belonged to the ancient Britons; and is ſaid alſo to have been one of the Roman ſtations. It has a double intrenchment, with a deep ditch. It is of an orbicular form, and has a very auguſt look, being erected on one of the moſt elegant plans for a fortreſs that can be imagined. In the north-weſt angle ſtood the palace of the biſhop, whoſe ſee was removed hither from Wilton and Sherborn; but the biſhop quarrelling with King Stephen, he ſeized the caſtle and put a garriſon into it, which was the principal cauſe of its deſtruction, as the ſee was ſoon after removed from hence to Saliſbury in 1219. The area of this ancient city is ſituated on an artificial hill, whoſe walls were three yards thick, the ruins of which in many places in the circumference are ſtill to be ſeen, and the tracks of the ſtreets and cathedral church may be traced out by the different colour of the corn growing where once the city ſtood. Here ſynods and parliaments have formerly been held, and hither were the ſtates of the kingdom ſummoned to ſwear fidelity to William the Conqueror. Here alſo was a palace of the Britiſh and Saxon kings, and of the Roman emperors; which was deſerted in the reign of Henry III. for want of water, ſo that one farm-houſe is all that is left of this ancient city; yet it is called the *Borough*

rough of Old Sarum, and ſends two members to parliament, who are choſen by the proprietors of certain adjacent lands.

In February 1795 a ſubterraneous paſſage was diſcovered at this place, of which we have the following account in the Gentleman's Magazine for March, in a letter dated Salisbury, Feb. 10. "Some perſons of Salisbury on Saturday laſt went to the upper verge of the fortification (the citadel), and on the right-hand, after they had reached the ſummit, diſcovered a large hole. They got a candle and lantern, and went down a flight of ſteps for more than 30 yards. It was an arched way ſeven feet wide, neatly chiſſeled out of the ſolid rock or chalk. It is probable the crown of the arch gave way from the ſudden thaw, and fell in. There is a great deal of rubbiſh at the entrance. It appears to be between ſix and ſeven feet high, and a circular arch overhead all the way. Theſe particulars I learned from the perſon who himſelf explored it, but was afraid to go farther leſt it might fall in again and bury him. He thinks it turns a little to the right towards Old Sarum houſe, and continues under the foſſe till it reached the outer verge. The marks of a chiſſel, he ſays, are viſible on the ſide. There are two large pillars of ſquare-ſtone at the entrance, which appear to have had a door at foot. They are 18 inches by 27, of good free-ſtone, and the maſon-work is extremely neat. The higheſt part of the archway is two feet below the ſurface of the ground.

"It is all now again filled up by order of farmer Whitchurch, who rents the ground of Lord Camelford, and thinks curioſity would bring ſo many people there as to tread down his graſs whenever graſs ſhall be there. I went into it 30 yards, which was as far as I could get for the rubbiſh. I meaſured it with a line, and found it extend full 120 feet inwards from the two pillars ſuppoſed to be the entrance; then onwards it appeared to be filled to the roof with rubbiſh. By meaſuring with the ſame line on the ſurface of the earth, I found it muſt go under the bottom of the outer bank of the outer trench; where I think the opening may be found by digging a very little way. Whether it was a Roman or a Norman work it is difficult to ſay; but it certainly was invented as a private way to go into or out of the caſtle; and probably a fort or ſtrong caſtle was built over the outer entrance. I looked for inſcriptions or coins, but have not heard of any being found."

SASSAFRAS. See Laurus.

SASHES, in military dreſs, are badges of diſtinction worn by the officers of moſt nations, either round their waiſt or over their ſhoulders. Thoſe for the Britiſh army are made of crimſon ſilk; for the Imperial army crimſon and gold; for the Pruſſian army black ſilk and ſilver; the Hanoverians yellow ſilk; the Portugueſe crimſon ſilk with blue taſſels.

SASINE, or SEISIN. See Law, N° clxiv. 15, &c.

SASSA. See Myrrh, Opocalpasum, and *Bruce's Travels*, Vol. V. p. 27, &c.

SATAN, a name very common in Scripture, means the devil or chief of the fallen angels. See Devil.

SATELLITE, in aſtronomy, the ſame with a ſecondary planet or moon.

SATIRE. See Satyr.

SATRAPA, or Satrapes, in Perſian antiquity, denotes an admiral; but more commonly the governor of a province.

SATTIN, a gloſſy kind of ſilk ſtuff, the warp of which is very fine, and ſtands ſo as to cover the coarſer woof.

SATTINET, a ſlight thin kind of ſattin, commonly ſtriped, and ordinarily uſed by the ladies for ſummer night-gowns.

SATURANTS, in anatomy, the ſame with Absorbents.

SATURATION, in chemiſtry, is the impregnating an acid with an alkali, or *vice verſa*, till either will receive no more, and the mixture will then become neutral.

SATURDAY, the ſeventh and laſt day of the week, ſo called from the idol Seater, worſhipped on this day by the ancient Saxons, and thought to be the ſame as the Saturn of the Latins.

SATUREIA, savory, in botany: A genus of the gymnoſpermia order, belonging to the didynamia claſs of plants; and in the natural method ranking under the 42d order, *Verticillatæ*. The ſegments of the corolla are nearly equal; the ſtamina ſtanding aſunder.

Species. 1. The hortenſis, or ſummer ſavory, is an annual plant, which grows naturally in the ſouth of France and Italy, but is cultivated in many places both for the kitchen and medicinal uſe. 2. The montana, or winter ſavory, is a perennial plant growing naturally in the ſouth of France and Italy, but is cultivated in gardens both for culinary and medicinal purpoſes.

Culture. Both kinds are propogated by ſeeds. Thoſe of the firſt kind ſhould be ſown in the beginning of April upon a bed of light earth, either where they are to remain, or for tranſplanting. If the plants are to ſtand unremoved, they ſhould be ſown thinly; but if they are to be tranſplanted, they may be ſown cloſer. The ſecond ſpecies may be ſown upon a poor dry ſoil, where the plants will endure the ſevereſt winters, though they are often killed by the froſt when planted in good ground. The plants will continue ſeveral years; but when they are old, the ſhoots will be ſhort and not ſo well furniſhed with leaves: it will therefore be proper to raiſe a ſupply of young plants every year.

Uſes. Summer ſavory is a very warm pungent aromatic; and affords in diſtillation with water a ſubtile eſſential oil, of a penetrating ſmell, and very hot acrid taſte. It yields little of its virtues by infuſion to aqueous liquors; rectified ſpirit extracts the whole of its taſte and ſmell, and elevates nothing in diſtillation.

SATURN, in aſtronomy, one of the planets of our ſolar ſyſtem, revolving at the diſtance of more than 900 millions of miles from the ſun. See Astronomy, n° 31, 104—109, 191, and 269.

Dr Herſchel, who has ſo much ſignalized himſelf by his diſcoveries in the celeſtial regions, has not omitted to make his obſervations on this planet, which he conſiders as one of the moſt engaging objects that aſtronomy offers to our view. His attention was firſt drawn to it in the year 1774, when he ſaw it ring reſembling in appearance a ſlender fine, extending on both ſides not much leſs than the diameter of the planet's diſk. The obſervation was taken with a five and an half feet reflector

Saturn. flector on the 17th of March; and on the 3d of April, the ſame year, when the planet appeared totally deprived of this noble appendage, by reaſon of the edge of the ring being then turned directly towards the earth, and inviſible on account of its thinneſs or incapacity to reflect the light to ſuch a diſtance. During the ſucceeding year, the ring appeared gradually opened, and at laſt aſſumed the ſhape of an ellipſe. "It ſhould be noticed (ſays he), that the black diſk or belt upon the ring of Saturn is not in the middle of its breadth. Nor is the ring ſubdivided by many ſuch lines, as has been repreſented in ſeveral treatiſes of aſtronomy; but that there is one ſingle, dark, conſiderably broad line, belt, or zone, upon the ring, which I have always permanently found in the place where my figure repreſents it."

This zone, which is on the northern part of the ring, does not change its ſhape or colour like the belts of Jupiter, ſo that it is probably owing to ſome permanent projection. It cannot, however, be the ſhadow of a chain of mountains, as it is viſible all round the ring; and there could be no ſhades viſible at the ends of the anſæ, on account of the direction of the ſun's illumination, which would be in the line of the chain; and the ſuppoſed argument will hold good againſt the ſuppoſition of caverns or concavities. It is likewiſe evident, that this dark zone is contained between two concentric circles, as all the phenomena anſwer to the projection of ſuch a zone. The Doctor gives a figure, repreſenting the planet as it appeared to him on the 10th of May 1780; whence we ſee that the zone is continued all the way round, with a gradual decreaſe towards the middle, anſwering to the appearance of a narrow circular plane projected into an ellipſis. See Philoſoph. Tranſ. for 1790, p. 3. &c.

It hath been conjectured, that this appearance is owing to a diviſion of the ring, or rather that there are two rings about the planet; "but (ſays Dr Herſchel) if one ring, of a breadth ſo conſiderable as that of Saturn, is juſtly to be eſteemed the moſt wonderful arch that by the laws of gravity can be held together, how improbable muſt it appear to ſuppoſe it ſubdivided into narrow ſlips of rings, which by this ſeparation will be deprived of a ſufficient depth, and thus loſe the only dimenſion which can keep them from falling upon the planet? It is true, indeed, that it may revolve with ſuch velocity as greatly to aſſiſt its ſtrength, and that in the ſubdiviſions, of courſe, the different velocities for each diviſion may be equally ſuppoſed to keep them up."

As to the ſubſtance of the ring, the Doctor ſuppoſes it to be no leſs ſolid than that of Saturn himſelf. Thus in the two figures given with the Doctor's Diſſertation in the Philoſophical Tranſactions above referred to, the ſhadow of the planet is delineated upon the ring as it actually appeared, according to the ſituation of the ſun; and in like manner we will ſee the ſhadow of the ring upon the planet: and if we deduce the quantity of matter contained in the planet from the power by which the ſatellites are preſerved in their orbits, the ring muſt alſo be taken into account. It is indeed evident that the ring exerts a very conſiderable force upon theſe bodies, ſince we find them affected with many irregularities in their motions, which we cannot properly aſcribe to any other cauſe than the quantity of matter contained in the ring; or, at leaſt, it ought to be allowed to have a proper ſhare in producing them.

The ring ſeems to be endowed with a greater reflective power than the body of the planet; and the Doctor gives inſtances of his ſeeing part of the ring brighter than Saturn himſelf, as well as of his ſeeing it plainly through a teleſcope which could ſcarcely afford light enough for the planet. The moſt remarkable property of this wonderful ring, however, is its extreme thinneſs. "When we were nearly in the plane of the ring (ſays our author), I have repeatedly ſeen the firſt, ſecond, and third ſatellites, nay even the ſixth and ſeventh, paſs before and behind the ring in ſuch a manner that they ſerved as excellent micrometers to eſtimate its thickneſs. It may be proper to mention a few inſtances, eſpecially as they will ſerve to ſolve ſome phenomena that have been remarked by other aſtronomers, though they have not been accounted for in a manner conſiſtently with other known facts. July 18th 1789, at $19^h\ 41'\ 9''$, ſidereal time, the firſt ſatellite ſeemed to hang upon the following arm, declining a little towards the north, and I ſaw it gradually advance upon it towards the body of Saturn; but the ring was not ſo thick as the lucid point. July 23d, at $19^h\ 41'\ 8''$; the ſecond ſatellite was a very little preceding the ring; but the ring appeared to be leſs than half the thickneſs of the ſatellite. July 27th, at $20^h\ 15'\ 12''$, the ſecond ſatellite was about the middle, upon the following arm of the ring, and towards the ſouth; and the ſixth ſatellite on the farther end towards the north; but the arm was thinner than either of them. Aug. 29th, at $22^h\ 12'\ 55''$, the third ſatellite was upon the ring, near the end of the preceding arm, when the latter ſeemed not to be the fourth, or at moſt the third part of the diameter of the ſatellite; which, in the ſituation it was, I took to be leſs than one ſingle ſecond in diameter. At the ſame time, I alſo ſaw the ſeventh ſatellite following the third, at a little diſtance, in the ſhape of a bead upon a thread, projecting on both ſides of the ſame arm. Hence alſo we are ſure that the arm appeared thinner than the ſeventh ſatellite, which is conſiderably ſmaller than the ſixth, which again is leſs than the firſt. Auguſt 31ſt, at $20^h\ 48'\ 26''$, the preceding arm was loaded about the middle with the third ſatellite. October 15th, at $0^h\ 43'\ 44''$, I ſaw the ſixth ſatellite, without obſtruction, about the middle of the preceding arm, though the ring was but barely viſible with my 40 feet reflector, even while the planet was in the meridian. However, we were then a little inclined to the plane of the ring, and the third ſatellite, when it came near its conjunction with the firſt, was ſo ſituated, that it muſt have partly covered it a few minutes after I loſt it behind my houſe. In all theſe obſervations, the ring did not in the leaſt interfere with my view of the ſatellites. October 16th, I followed the ſixth and ſeventh ſatellites up to the very diſk of the planet; and the ring, which was extremely faint, did not in the leaſt obſtruct my ſeeing them gradually approach the diſk, where the ſeventh vaniſhed at $21^h\ 46'\ 44''$, and the ſixth at $22^h\ 36'\ 44''$. There is, however, ſome ſuſpicion, that by a refraction through ſome very rare atmoſphere on the two planes of the ring, the ſatellites might be lifted up and depreſſed ſo as to become viſible on both ſides of the ring, even though the latter ſhould be equal in thickneſs to the diameter of the ſmalleſt ſatellite, which may amount to 1000 miles.—As for the arguments of its incredible thinneſs, which ſome

Saturn. ſome aſtronomers have brought from the ſhort time of its being inviſible when the earth paſſes through its plane, we cannot ſet much value upon them; for they muſt have ſuppoſed the edge of the ring, as they have alſo repreſented it in their figure, to be ſquare; but there is the greateſt reaſon to ſuppoſe it either ſpherical or ſpheroidal; in which caſe evidently the ring cannot diſappear for any long time. Nay I may venture to ſay, that the ring cannot poſſibly diſappear, on account of its tainneſs; ſince, either from the edge or the ſides, even if it were ſquare on the corners, it muſt always expoſe to our ſight ſome part which is illuminated by the rays of the ſun; and that this is plainly the caſe we may conclude from its being viſible in my teleſcopes during the time when others of leſs light had loſt it; and when evidently we were turned towards the unenlightened ſide, ſo that we muſt either ſee the roun ing ſide of the unenlightened edge, or elſe the reflection of the light of Saturn upon the ſide of the darkened ring, as we ſee the reflected light of the earth on the darkened part of the new moon. I will not however, take upon me to decide which of the two may be the caſe, eſpecially as there are other very ſtrong reaſons which induce us to think that the edge of the ring is of ſuch a nature as not to reflect much light."

Several aſtronomers have ſuppoſed that the ring of Saturn is full of mountains and inequalities, like the moon; and of this opinion Dr Herſchel himſelf was for a conſiderable time, till happening to obſerve one of theſe lucid points with attention for a conſiderable time, he ſaw it leave the ring altogether, and ſhow itſelf as a ſatellite never before obſerved. With regard to the ring itſelf, he concludes his obſervations in theſe words: "Upon the whole, therefor', I cannot ſay that I had any one inſtance that could induce me to believe that the ring was not of one uniform thickneſs; that is, equally thick at equal diſtances from the centre, and of an equal diameter throughout the whole of its conſtruction. The idea of protuberant points upon the ring of Saturn, indeed, is of itſelf ſufficient to render their exiſtence inadmiſſible, when we conſider the enormous ſize which ſuch points ought to be of to render them viſible at the diſtance we are from that planet.

With regard to the ſatellites, the Doctor informs us, that he was long convinced of the exiſtence of a ſixth; and had he been more at leiſure at the time of his diſcovering thoſe of the Georgium Sidus, he would probably have completed the diſcovery of the ſatellites of Saturn alſo. The ſixth was firſt obſerved diſtinctly on the 28th of Auguſt 1789, and the ſeventh on the 17th of September the ſame year. Theſe ſatellites, however, do not occupy the place which we ſhould have previouſly ſuppoſed them, being, in fact, the innermoſt of the whole. The ſeventh is next the body of the planet itſelf, and is very ſmall. It revolves at the diſtance of 27.^{l}366 from the centre of Saturn, and ſeems to move exactly in the plane of the ring; but the Doctor obſerves, that it is exceedingly difficult to make a ſufficient number of obſervations on it to determine the revolution exactly. He computes its periodical time at 22^{h} 40′ 46^{l}. The ſixth ſatellite is next to the ſeventh, and revolves at the diſtance of 35.058 from the centre of its primary in 1^{d} 8^{h} 53′ 9^{l}. Its light is conſiderably ſtrong, but not equal to that of the firſt ſatellite of former aſtronomers, which lies immediately beyond it.

The planet Saturn is now obſerved to have belts or ſtriæ upon its diſk as diſtinctly as Jupiter. Dr Herſchel, on the 9th of April 1775, obſerved a northern belt on his diſk, inclined a little to the line of the ring. On the 1ſt of May 1776, there was another belt obſerved, inclined about 15° to the ring line, but more to the ſouth; and on the following ſide came up to the place where the ring croſſes the body of the planet.—On the 8th of April two belts were obſerved, and theſe continued with variations, and ſometimes the appearance of a third belt, till the 8th of September, when the account of the obſervations was diſcontinued. The Doctor remarks, that he generally obſerved theſe belts in equatorial poſitions, though ſometimes it was otherwiſe. Two concluſions, he ſays, may be drawn from the obſervations he made this year. "The firſt, which relates to the changes in the appearance of the belts, is, that Saturn has probably a very conſiderable atmoſphere, in which theſe changes take place, ſuch as the alterations in the belts of Jupiter have been ſhewn with great probability to be in his atmoſphere. This has alſo been confirmed by other obſervations. Thus, in occultations of Saturn's ſatellites, I have found them to hang to the diſk for a long while before they would vaniſh. And though we ought to make ſome allowance for the encroachment of light, whereby a ſatellite is ſeen to reach up to the diſk ſooner than it actually does, yet without a conſiderable refraction it could hardly be kept ſo long in view after the apparent contact. The time of hanging upon the diſk in the ſeventh ſatellite has actually amounted to 20 minutes. Now, as its quick motion during that interval carries it through an arch of near ſix degrees, we find that this would denote a fraction of about two ſeconds, provided the encroaching of light had no ſhare in producing the effect. By an obſervation of the ſixth ſatellite, the refraction of Saturn's atmoſphere amounts to nearly the ſame quantity; for this ſatellite remained about 14 or 15 minutes longer in view than it ſhould have done; and as it moves about 2½ degrees in that time, and its orbit is larger than that of the ſeventh, the difference is inconſiderable. The next inference we may draw from the appearance of the belts on Saturn is, that this planet turns upon an axis which is perpendicular to his ring. The arrangement of the belts, during the courſe of 15 years that I have obſerved them, has always followed the direction of the ring, which is what I have called *being equatorial*. Thus, as the ring opened, the belts began to advance towards the ſouth, and to ſhow an incurvature anſwering to the projection of an equatorial line, or to a parallel of the ſame. When the ring cloſed up, they returned towards the north, and are now, while the ring paſſes over the centre, exactly ranging with the ſhadow of it, on the body, generally one on each ſide, with a white belt cloſe to it. When I ſay that the belts have always been equatorial, I paſs over trifling exceptions, which certainly were owing to local cauſes. The ſtep from equatorial belts to a rotation on an axis is ſo eaſy, and, in the caſe of Jupiter, ſo well aſcertained, that I ſhall not heſitate to take the ſame conſequence for granted here. But if there could remain a doubt, the obſervations of June 27th, 28th, and 21ſt, 1780, when [illegible] upon one of the belts were [illegible] ſhould have given it completely."

Saturn. Another evidence that Saturn, as well as the other planets, revolves upon its axis, is drawn from its flattened ſhape, like that of Mars, Jupiter, and Saturn. On the 31ſt of May 1781, the diſk ſeemed to deviate as much from a true circle as that of Jupiter, though by the interference of the ring this could not be ſo well determined as after an interval of eight years. On the 18th of Auguſt 1787, the difference between the equatorial and polar diameters was meaſured, the mean of three obſervations of the former being 22″.81, of the latter 20″.61. From theſe obſervations, it appears that the polar diameter of Saturn is to his equatorial diameter nearly as 10 to 11; and that his axis is perpendicular to the plane of the ring.

In a ſubſequent paper, the Doctor gives up his reaſoning againſt fixed lucid points in the ring, in conſequence of having frequently obſerved them in ſuch ſituations as could not by any means be accounted for by the ſatellites. He even attempts to invalidate his own arguments abovementioned concerning the vaſt magnitude of the mountains neceſſary to make them viſible at this diſtance. "As obſervations (ſays he) carefully made ſhould always take the lead of theories, I ſhall not be concerned if ſuch lucid ſpots as I am now going to admit, ſhould ſeem to contradict what has been ſaid in my laſt paper concerning the idea of inequalities or protuberant points. We may, however, remark, that a lucid and apparently protuberant point may exiſt without any great inequality in the ring. A vivid light, for inſtance, will ſeem to project greatly beyond the limits of the body on which it is placed. If, therefore, the luminous places on the ring ſhould be ſuch as proceed from very bright reflecting regions, or, which is more probable, owe their exiſtence to the more fluctuating cauſes of inherent fires acting with great violence, we need not imagine the ring of Saturn to be very uneven or diſtorted, in order to preſent us with ſuch appearances. In this ſenſe of the word, then, we may ſtill oppoſe the idea of protuberant points, ſuch as would denote immenſe mountains of elevated ſurface.

"On comparing together ſeveral obſervations, a few trials ſhew that the brighteſt and beſt obſerved ſpot agrees to a revolution of $10^h\ 32'\ 15''.4$; and calculating its diſtance from the centre of Saturn, on a ſuppoſition of its being a ſatellite, we find it $17''.227$, which brings it upon the ring. It is therefore certain, that unleſs we ſhould imagine the ring to be ſufficiently fluid to allow a ſatellite to revolve in it, or ſuppoſe a notch, groove, or diviſion in the ring, to ſuffer the ſatellite to paſs along, we ought to admit a revolution of the ring itſelf. The denſity of the ring, indeed, may be ſuppoſed to be very inconſiderable by thoſe who imagine its light to be rather the effect of ſome ſhining fluid, like an aurora borealis, than a reflection from ſome permanent ſubſtance; but its diſapparition, in general, and in my teleſcopes its faintneſs, when turned edgewiſe, are in no manner favourable to this idea.—When we add alſo, that this ring caſts a deep ſhadow upon the planet, is very ſharply defined both in its outer and inner edge, and in brightneſs exceeds the planet itſelf, it ſeems to be almoſt proved that its conſiſtence cannot be leſs than the body of Saturn, and that conſequently no degree of fluidity can be admitted ſufficient to permit a revolving body to keep in motion for any length of time. A groove might afford a paſſage, eſpecially as on a former occaſion we have already conſidered the idea of a divided ring. A circumſtance alſo which ſeems rather to favour this idea, is, that in ſome obſervations a bright ſpot has been ſeen to project equally on both ſides, as the ſatellites have been obſerved to do when they paſſed the ring. But, on the other hand, we ought to conſider, that the ſpot has often been obſerved very near the end of the arms of Saturn's ring, and that the calculated diſtance is conſequently a little too ſmall for ſuch appearances, and ought to be 19 or 20 ſeconds at leaſt. We ſhould alſo attend to the ſize of the ſpot, which ſeems to be variable: for it is hardly to be imagined that a ſatellite, brighter than the ſixth, and which could be ſeen with the moon nearly at full, ſhould ſo often eſcape our notice in its frequent revolutions, unleſs it varied much in its apparent brightneſs. To this we muſt add another argument drawn from the number of lucid ſpots, which will not agree with the motion of one ſatellite only; whereas, by admitting a revolution of the ring itſelf in $10^h\ 32'\ 15''.4$, and ſuppoſing all the ſpots to adhere to the ring, and to ſhare in the ſame periodical return, provided they laſt long enough to be ſeen many times, we ſhall be able to give an eaſy ſolution of all the remaining phenomena. See Phil. Tranſ. 1790, p. 427.

Saturn, in chemiſtry, an appellation given to lead.

Saturn, in heraldry, denotes the black colour in blazoning the arms of ſovereign princes.

Saturn, one of the principal of the Pagan deities, was the ſon of Cœlus and Terra, and the father of Jupiter. He depoſed and caſtrated his father; and obliged his brother Titan to reſign his crown to him, on condition of his bringing up none of his male iſſue, that the ſucceſſion might at length devolve on him. For this purpoſe he devoured all the ſons he had by his wife Rhea or Cybele: but ſhe bringing forth at one time Jupiter and Juno, ſhe preſented the latter to her huſband, and ſent the boy to be nurſed on mount Ida; when Saturn being informed of her having a ſon, demanded the child; but in his ſtead his wife gave him a ſtone ſwaddled up like an infant, which he inſtantly ſwallowed. Titan finding that Saturn had violated the contract he had made with him, put himſelf at the head of his children, and made war on his brother, and having made him and Cybele priſoners, confined them in Tartarus: but Jupiter being in the mean time grown up, raiſed an army in Crete, went to his father's aſſiſtance, defeated Titan, and reſtored Saturn to the throne. Some time after, Saturn being told that Jupiter intended to dethrone him, endeavoured to prevent it; but the latter being informed of his intentions, depoſed his father, and threw him into Tartarus. But Saturn eſcaping from thence fled into Italy, where he was kindly received by Janus king of the country, who aſſociated him to the government: whence Italy obtained the name of *Saturnia Tellus*; as alſo that of *Latium*, from *latio*, "to lie hid." There Saturn by the wiſdom and mildneſs of his government, is ſaid to have produced the golden age.

Saturn is repreſented as an old man with four wings, armed with a ſcythe; ſometimes he is delineated under the figure of a ſerpent with its tail in its mouth. This is emblematic of the ſeaſons, which roll perpetually in the ſame circle. Sometimes alſo Saturn is painted

with

Saturnalia ‖ Satyavrata.

with a sand-glass in his hand. The Greeks say, that the story of his mutilating his father and destroying his children is an allegory, which signifies, that Time devours the past and present, and will also devour the future. The Romans, in honour of him, built a temple and celebrated a festival, which they called *Saturnalia*. During this festival no business or profession was allowed to be carried on except cookery; all distinctions of rank ceased; slaves could say what they pleased to their masters with impunity; they could even rally them with their faults before their faces.

SATURNALIA, in Roman antiquity, a festival observed about the middle of December, in honour of the god Saturn, whom Lucan introduces giving an account of the ceremonies observed on this occasion, thus. "During my whole reign, which lasts but for one week, no public business is done; there is nothing but drinking, singing, playing, creating imaginary kings, placing servants with their masters at table, &c. There shall be no disputes, reproaches, &c. but the rich and poor, masters and slaves, shall be equal," &c.

On this festival the Romans sacrificed bare-headed, contrary to their custom at other sacrifices.

SATURNINE, an appellation given to persons of a melancholy disposition, as being supposed under the influence of the planet Saturn.

SATURNITE, a name given by Mr Kirwan to a new metallic substance, supposed to be discovered by M. Monnet. It was met with in some lead founderies at a place named *Poulla ouen* in Brittany; being separated from the lead ore during its torrefaction. It resembles lead in colour, weight, solubility in acids and other properties, but differs from it in being more fusible, brittle, easily scorified and volatilized, and likewise not being miscible with lead in fusion. Messieurs Hassenfratz and Girond contended, that this saturnite was nothing but a compound of different substances, and accordingly gave an analysis of it as consisting of lead, copper, iron, silver, and sulphur; the proportions of which must naturally vary according to the quality of the ore put into the furnace. M. Monnet, however, insisted that the substance analysed by them was not that which he had discovered; but when he again visited the mines abovementioned, he could meet with none of the substance there which he found before.

SATYAVRATA, or Menu, in Indian mythology, is believed by the Hindoos to have reigned over the whole world in the earliest age of their chronology, and to have resided in the country of Dravira on the coast of the eastern Indian peninsula. His patronymic name was *Vaivaswata*, or *child of the sun*. In the *Bagavat* we are informed, that the Lord of the Universe, intending to preserve him from the sea of destruction, caused by the depravity of the age, thus told him how he was to act. "In seven days from the present time, O thou tamer of enemies, the three worlds will be plunged in an ocean of death; but in the midst of the destroying waves, a large vessel, sent by me for thy use, shall stand before thee. Then shalt thou take all medicinal herbs, all the variety of seeds; and, accompanied by seven saints, encircled by pairs of all brute animals, thou shalt enter the spacious ark and continue in it, secure from the flood on one immense ocean without light, except the radiance of thy holy companions. When the ship shall be agitated by an impetuous wind, thou shalt fasten it with a large sea-serpent on my horn; for I will be near thee: drawing the vessel, with thee and thy attendants, I will remain on the ocean, O chief of men, until a night of Brahma shall be completely ended. Thou shalt then know my true greatness, rightly named the supreme Godhead; by my favour, all thy questions shall be answered, and thy mind abundantly instructed." All this is said to have been accomplished; and the story is evidently that of Noah disguised by Asiatic fiction and allegory. It proves, as Sir William Jones has rightly observed, an ancient Indian tradition of the universal deluge described by Moses; and enables us to trace the connection between the eastern and western traditions relating to that event. The same learned author has shown it to be in the highest degree probable, that the *Satyavrata* of India is the *Cronus* of Greece and the *Saturn* of Italy. See Saturn; and *Asiatic Researches*, Vol. I. p. 230, &c.

Satyr ‖ Savage.

SATYR, or Satire, in matters of literature, a discourse or poem, exposing the vices and follies of mankind. See Poetry, Part II. Sect. x.

The chief satirists among the ancients are, Horace, Juvenal, and Persius: those among the moderns, are, Regnier and Boileau, in French; Butler, Dryden, Rochester, Buckingham, Swift, Pope, Young, &c. among the English; and Cervantes among the Spaniards.

SATYRIASIS. See Medicine, n° 372.

SATYRIUM, in botany: A genus of the diandria order, belonging to the gynandria class of plants; and in the natural method ranking under the 42d order, *Verticillatæ*. The nectarium is scrotiform, or inflated double behind the flower.

SATYRS (in ancient mythology) a species of demi-gods who dwelt in the woods. They are represented as monsters, half-men, and half-goats; having horns on their heads, a hairy body, with the feet and tail of a goat. They are generally in the train that follows Bacchus. As the poets supposed that they were remarkable for piercing eyes and keen raillery, they have placed them in the same pictures with the Graces, Loves, and even with Venus herself.

SAVAGE (Richard) one of the most remarkable characters that is to be met with perhaps in all the records of biography, was the son of Anne countess of Macclesfield by the earl of Rivers, according to her own confession; and was born in 1698. This confession of adultery was made in order to procure a separation from her husband the earl of Macclesfield: yet, having obtained this desired end, no sooner was her spurious offspring brought into the world, than, without the dread of shame or poverty to excuse her, she discovered the resolution of disowning him; and, as long as he lived, treated him with the most unnatural cruelty. She delivered him over to a poor woman to educate as her own; prevented the earl of Rivers from leaving him a legacy of L.6000, by declaring him dead; and in effect deprived him of another legacy which his godmother Mrs Lloyd had left him, by concealing from him his birth, and thereby rendering it impossible for him to prosecute his claim. She endeavoured to send him secretly to the plantations; but this plan being either laid aside or frustrated, she placed him apprentice with a shoemaker. In this situation, however, he did not long continue: for his nurse dying, he went to take care of the effects of his supposed mother: and found in

Savage. her boxes ſome letters which diſcovered to young Savage his birth, and the cauſe of its concealment. Savage.

From the moment of this diſcovery it was natural for him to become diſſatisfied with his ſituation as a ſhoemaker. He now conceived that he had a right to ſhare in the affluence of his real mother; and therefore he directly, and perhaps indiſcreetly, applied to her, and made uſe of every art to awaken her tenderneſs and attract her regard. But in vain did he ſolicit this unnatural parent; ſhe avoided him with the utmoſt precaution, and took meaſures to prevent his ever entering her houſe on any pretence whatever.

Savage was at this time ſo touched with the diſcovery of his birth, that he frequently made it his practice to walk before his mother's door in hopes of ſeeing her by accident; and often did he warmly ſolicit her to admit him to ſee her; but all to no purpoſe: he could neither ſoften her heart nor open her hand.

Mean time, while he was aſſiduouſly endeavouring to rouſe the affections of a mother in whom all natural affection was extinct, he was deſtitute of the means of ſupport, and reduced to the miſeries of want. We are not told by what means he got rid of his obligation to the ſhoemaker, or whether he ever was actually bound to him; but we now find him very differently employed in order to procure a ſubſiſtence. In ſhort, the youth had parts, and a ſtrong inclination towards literary purſuits, eſpecially poetry. He wrote a poem; and afterwards two plays, *Woman's a Riddle* and *Love in a Veil*: but the author was allowed no part of the profits from the firſt; and from the ſecond he received no other advantage than the acquaintance of Sir Richard Steel and Mr Wilks, by whom he was pitied, careſſed, and relieved. However the kindneſs of his friends not affording him a conſtant ſupply, he wrote the tragedy of *Sir Thomas Overbury*; which not only procured him the eſteem of many perſons of wit, but brought him in 200l. The celebrated Aaron Hill, Eſq; was of great ſervice to him in correcting and fitting this piece for the ſtage and the preſs; and extended his patronage ſtill farther. But Savage was, like many other wits, a bad manager, and was ever in diſtreſs. As faſt as his friends raiſed him out of one difficulty, he ſunk into another; and, when he found himſelf greatly involved, he would ramble about like a vagabond, with ſcarce a ſhirt on his back. He was in one of theſe ſituations all the time wherein he wrote his tragedy abovementioned; without a lodging, and often without a dinner: ſo that he uſed to ſcribble on ſcraps of paper picked up by accident, or begged in the ſhops, which he occaſionally ſtepped into, as thoughts occurred to him, craving the favour of pen and ink, as it were juſt to take a memorandum.

Mr Hill alſo earneſtly promoted a ſubſcription to a volume of *Miſcellanies*, by Savage; and likewiſe furniſhed part of the poems of which the volume was compoſed. To this miſcellany Savage wrote a preface, in which he gives an account of his mother's cruelty, in a very uncommon ſtrain of humour.

The profits of his Tragedy and his Miſcellanies together, had now, for a time, ſomewhat raiſed poor Savage both in circumſtances and credit; ſo that the world juſt began to behold him with a more favourable eye than formerly, when both his fame and life were endangered by a moſt unhappy event. A drunken frolic in which he one night engaged, ended in a fray, and Savage unfortunately killed a man, for which he was condemned to be hanged; his friends earneſtly ſolicited the mercy of the crown, while his mother as earneſtly exerted herſelf to prevent his receiving it. The counteſs of Hertford at length laid his whole caſe before queen Caroline, and Savage obtained a pardon.

Savage had now loſt that tenderneſs for his mother, which the whole ſeries of her cruelty had not been able wholly to repreſs; and conſidering her as an implacable enemy, whom nothing but his blood could ſatisfy, threatened to haraſs her with lampoons, and to publiſh a copious narrative of her conduct, unleſs ſhe conſented to allow him a penſion. This expedient proved ſucceſsful; and the lord Tyrconnel, upon his promiſe of laying aſide his deſign of expoſing his mother's cruelty, took him into his family, treated him as an equal, and engaged to allow him a penſion of 200l. a-year. This was the golden part of Savage's life. He was courted by all who endeavoured to be thought men of genius, and careſſed by all who valued themſelves upon a refined taſte. In this gay period of his life he publiſhed the *Temple of Health and Mirth*, on the recovery of lady Tyrconnel from a languiſhing illneſs; and *The Wanderer*, a moral poem, which he dedicated to lord Tyrconnel, in ſtrains of the higheſt panegyric: but theſe praiſes he in a ſhort time found himſelf inclined to retract, being diſcarded by the man on whom they were beſtowed. Of this quarrel lord Tyrconnel and Mr Savage aſſigned very different reaſons. Our author's known character pleads too ſtrongly againſt him; for his conduct was ever ſuch as made all his friends, ſooner or later, grow weary of him, and even forced moſt of them to become his enemies.

Being thus once more turned adrift upon the world, Savage, whoſe paſſions were very ſtrong, and whoſe gratitude was very ſmall, became extremely diligent in expoſing the faults of lord Tyrconnel. He, moreover, now thought himſelf at liberty to take revenge upon his mother.—Accordingly he wrote *The Baſtard*, a poem, remarkable for the vivacity of its beginning, (where he finely enumerates the imaginary advantages of baſe birth), and for the pathetic concluſion, wherein he recounts the real calamities which he ſuffered by the crime of his parents.—The reader will not be diſpleaſed with a tranſcript of ſome of the lines in the opening of the poem, as a ſpecimen of this writer's ſpirit and manner of verſification.

Bleſt be the baſtard's birth! thro' wondrous ways,
He ſhines eccentric like a comet's blaze.
No ſickly fruit of faint compliance he;
He! ſtamp'd in nature's mint with eccſtacy!
He lives to build, not boaſt, a gen'rous race;
No tenth tranſmitter of a fooliſh face.
He, kindling from within, requires no flame,
He glories in a baſtard's glowing name.
—Nature's unbounded ſon, he ſtands alone,
His heart unbias'd, and his mind his own.
—O mother! yet no mother!—'tis to you
My thanks for ſuch diſtinguiſh'd claims are due.

This poem had an extraordinary ſale; and its appearance happening at the time when his mother was at Bath, many perſons there took frequent opportunities of repeating paſſages from the Baſtard in her hearing.

Savage. ing. This was perhaps the firſt time that ever ſhe diſcovered a ſenſe of ſhame, and on this occaſion the power of wit was very conſpicuous; the wretch who had, without ſcruple, proclaimed herſelf an adultereſs, and who had firſt endeavoured to ſtarve her ſon, then to tranſport him, and afterwards to hang him, was not able to bear the repreſentation of her own conduct; but fled from reproach, though ſhe felt no pain from guilt; and left Bath with the utmoſt haſte, to ſhelter herſelf among the crowds of London (A).

Some time after this, Savage formed the reſolution of applying to the queen; who having once given him life, he hoped ſhe might farther extend her goodneſs to him by enabling him to ſupport it.—With this view, he publiſhed a poem on her birth-day, which he entitled *The Volunteer-Laureat*; for which ſhe was pleaſed to ſend him 50l. with an intimation that he might annually expect the ſame bounty. But this annual allowance was nothing to a man of his ſtrange and ſingular extravagance. His uſual cuſtom was, as ſoon as he had received his penſion, to diſappear with it, and ſecrete himſelf from his moſt intimate friends, till every ſhilling of the 50l. was ſpent; which done, he again appeared, pennyleſs as before: But he would never inform any perſon where he had been, nor in what manner his money had been diſſipated.—From the reports, however, of ſome who found means to penetrate his haunts, it would ſeem that he expended both his time and his caſh in the moſt ſordid and deſpicable ſenſuality; particularly in eating and drinking, in which he would indulge in the moſt unſocial manner, ſitting whole days and nights by himſelf, in obſcure houſes of entertainment, over his bottle and trencher, immerſed in filth and ſloth, with ſcarce decent apparel; generally wrapped up in a horſeman's great coat; and, on the whole, with his very homely countenance, and altogether, exhibiting an object the moſt diſguſting to the ſight, if not to ſome other of the ſenſes. Savage.

His wit and parts, however, ſtill raiſed him new friends as faſt as his miſbehaviour loſt him his old ones. Yet ſuch was his conduct, that occaſional relief only furniſhed the means of occaſional exceſs; and he defeated all attempts made by his friends to fix him in a decent way. He was even reduced ſo low as to be deſtitute of a lodging; inſomuch that he often paſſed his nights in thoſe mean houſes that are ſet open for caſual wanderers; ſometimes in cellars amidſt the riot and filth of the moſt profligate of the rabble; and not ſeldom would he walk the ſtreets till he was weary, and then lie down in ſummer on a bulk, or in winter with his aſſociates among the aſhes of a glaſs-houſe.

Yet, amidſt all his penury and wretchedneſs, had this man ſo much pride, and ſo high an opinion of his own merit, that he ever kept up his ſpirits, and was always ready to repreſs, with ſcorn and contempt, the leaſt appearance of any ſlight or indignity towards himſelf, in the behaviour of his acquaintance; among whom he looked upon none as his ſuperior. He would be treated as an equal, even by perſons of the higheſt rank. We have an inſtance of this prepoſterous and inconſiſtent pride, in his refuſing to wait upon a gentleman who was deſirous of relieving him when at the loweſt ebb of diſtreſs, only becauſe the meſſage ſignified the gentleman's deſire to ſee him at nine in the morning. Savage could not bear that any one ſhould preſume to preſcribe the hour of his attendance, and therefore he abſolutely rejected the proffered kindneſs. This life, unhappy as it may be already imagined, was yet rendered more unhappy, by the death of the queen, in 1738; which ſtroke deprived him of all hopes from the court. His penſion was diſcontinued, and the inſolent manner in which he demanded of Sir Robert

(A) Mr Boſwell, in his life of Dr Johnſon, has called in queſtion the ſtory of Savage's birth, and grounded his ſuſpicion on two miſtakes, or, as he calls them, falſehoods, which he thinks he has diſcovered in his friend's memoirs of that extraordinary man. Johnſon has ſaid, that the earl of Rivers was Savage's godfather, and gave him his own name; which, by his direction, was inſerted in the regiſter of the pariſh of St Andrew's, Holborn. Part of this, it ſeems, is not true; for Mr Boſwell carefully inſpected that regiſter, but no ſuch entry is to be found. But does this omiſſion amount to a proof, that the perſon who called himſelf *Richard Savage* was an impoſtor, and not the ſon of the earl of Rivers and the counteſs of Macclesfield? Mr Boſwell thinks it does; and, in behalf of his opinion, appeals to the maxim *falſum in uno, falſum in omnibus*. The ſolidity of this maxim may be allowed by others; but it was not without ſurpriſe that, on ſuch an occaſion, we found it adopted by the biographer of Johnſon. To all who have compared his view of a celebrated cauſe, with Stuart's letters on the ſame ſubject addreſſed to Lord Mansfield, it muſt be apparent, that, at one period of his life, he would not have deemed a thouſand ſuch miſtakes ſufficient to invalidate a narrative otherwiſe ſo well authenticated as that which relates to the birth of Savage. The truth is, that the omiſſion of the name in the regiſter of St Andrew's may be eaſily accounted for, without bringing againſt the wretched Savage an accuſation of impoſture, which neither his mother nor her friends dared to urge when provoked to it by every poſſible motive that can influence human conduct. The earl of Rivers would undoubtedly give the direction about regiſtering the child's name to the ſame perſon whom he entruſted with the care of his education; but that perſon, it is well known, was the counteſs of Macclesfield, who, as ſhe had reſolved from his birth to diſown her ſon, would take care that the direction ſhould not be obeyed.

That which, in Johnſon's life of Savage, Mr Boſwell calls a ſecond falſehood, ſeems not to amount even to a miſtake. It is there ſtated, that "Lady Macclesfield having lived for ſome time upon very uneaſy terms with her huſband, thought a public confeſſion of adultery the moſt obvious and expeditious method of obtaining her liberty." This Mr Boſwell thinks cannot be true; becauſe, having peruſed the journals of both houſes of parliament at the period of her divorce, he there found it authentically aſcertained, that ſo far from voluntarily ſubmitting to the ignominious charge of adultery, ſhe made a ſtrenuous defence by her counſel. But what is this to the purpoſe? Johnſon has no where ſaid, that ſhe confeſſed her adultery at

Savage. Walpole to have it reſtored, for ever cut off this conſiderable ſupply; which poſſibly had been only delayed, and might have been recovered by proper application.

His diſtreſs now became ſo great, and ſo notorious, that a ſcheme was at length concerted for procuring him a permanent relief. It was propoſed that he ſhould retire into Wales, with an allowance of 50 l. *per annum*, on which he was to live privately, in a cheap place, for ever quitting his town-haunts, and reſigning all further pretenſions to fame. This offer he ſeemed gladly to accept; but his intentions were only to deceive his friends, by retiring for a while, to write another tragedy, and then to return with it to London in order to bring it upon the ſtage.

In 1739, he ſet out for Swanſey, in the Briſtol ſtage-coach, and was furniſhed with 15 guineas to bear the expence of his journey. But, on the 14th day after his departure, his friends and benefactors, the principal of whom was no other than the great Mr Pope, who expected to hear of his arrival in Wales, were ſurpriſed with a letter from Savage, informing them that he was yet upon the road, and could not proceed for want of money. There was no other remedy than a remittance; which was ſent him, and by the help of which he was enabled to reach Briſtol, from whence he was to proceed to Swanſey by water. At Briſtol, however, he found an embargo laid upon the ſhipping; ſo that he could not immediately obtain a paſſage. Here, therefore, being obliged to ſtay for ſome time, he, with his uſual facility, ſo ingratiated himſelf with the principal inhabitants, that he was frequently invited to their houſes, diſtinguiſhed at their public entertainments, and treated with a regard that highly gratified his vanity, and therefore eaſily engaged his affections. At length, with great reluctance, he proceeded to Swanſey; where he lived about a year, very much diſſatisfied with the diminution of his ſalary; for he had, in his letters, Savage. treated his contributors ſo inſolently, that moſt of them withdrew their ſubſcriptions. Here he finiſhed his tragedy, and reſolved to return with it to London: which was ſtrenuouſly oppoſed by his great and conſtant friend Mr Pope; who propoſed that Savage ſhould put this play into the hands of Mr Thompſon and Mr Mallet, in order that they might fit it for the ſtage, that his friends ſhould receive the profits it might bring in, and that the author ſhould receive the produce by way of annuity. This kind and prudent ſcheme was rejected by Savage with the utmoſt contempt.—He declared he would not ſubmit his works to any one's correction; and that he would no longer be kept in leading-ſtrings. Accordingly he ſoon returned to Briſtol, in his way to London; but at Briſtol, meeting with a repetition of the ſame kind treatment he had before found there, he was tempted to make a ſecond ſtay in that opulent city for ſome time. Here he was again not only careſſed and treated, but the ſum of 30 l. was raiſed for him, with which it had been happy if he had immediately departed for London: But he never conſidered that a frequent repetition of ſuch kindneſs was not to be expected, and that it was poſſible to tire out the generoſity of his Briſtol friends, as he had before tired his friends everywhere elſe. In ſhort, he remained here till his company was no longer welcome. His viſits in every family were too often repeated; his wit had loſt its novelty, and his irregular behaviour grew troubleſome. Neceſſity came upon him before he was aware; his money was ſpent, his clothes were worn out, his appearance was ſhabby, and his preſence was diſguſtful at every table. He now began to find every man from home at whoſe houſe he called; and he found it difficult to obtain a dinner. Thus reduced, it would have been prudent in him to have withdrawn from the place; but prudence and Savage were never acquainted.

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the bar of either houſe of parliament, but only that her confeſſion was *public;* and as he has taught us in his Dictionary, that whatever is *notorious* or *generally* known is *public*; public, in his ſenſe of the word, that confeſſion certainly was, if made to different individuals, in ſuch a manner as ſhowed that ſhe was not anxious to conceal it from her huſband, or to prevent its notoriety. She might, however, have very cogent reaſons for denying her guilt before parliament, and for making a ſtrenuous defence by her counſel; as indeed, had ſhe acted otherwiſe, it is very little probable that her great fortune would have been reſtored to her, or that ſhe could have obtained a ſecond huſband.

But Mr Boſwell is of opinion, that the perſon who aſſumed the name of Richard Savage was the ſon of the ſhoemaker under whoſe care Lady Macclesfield's child was placed; becauſe "his not being able to obtain payment of Mrs Lloyd's legacy muſt be imputed to his conſciouſneſs that he was not the real perſon to whom that legacy was left." He muſt have a willing mind who can admit this argument as a proof of impoſture. Mrs Lloyd died when Savage was in his 10th year, when he certainly did not know or ſuſpect that he was the perſon for whom the legacy was intended, when he had none to proſecute his claim, to ſhelter him from oppreſſion, or to call in law to the aſſiſtance of juſtice. In ſuch circumſtances he could not have obtained payment of the money, unleſs the executors of the will had been inſpired from heaven with the knowledge of the perſon to whom it was due.

To theſe and a thouſand ſuch idle cavils it is a ſufficient anſwer, that Savage was acknowledged and patronized as Lady Macclesfield's ſon by Lord Tyrconnel, who was that lady's nephew; by Sir Richard Steel the intimate friend of colonel Brett, who was that lady's ſecond huſband; by the Queen, who, upon the authority of that lady and her creatures, once thought Savage capable of entering his *mother's* houſe in the night with an intent to murder her; and in effect by *the lady herſelf*, who at one time was prevailed upon to give him 50 l. and who fled before the Satire of the *Baſtard*, without offering, either by herſelf or her friends, to deny that the author of that poem was the perſon whom he called himſelf, or to inſinuate ſo much as that he might *poſſibly* be the ſon of a ſhoemaker. To Mr Boſwell all this ſeems *ſtrange:* to others, who look not with ſo keen an eye for ſuppoſitious births, we think it muſt appear *convincing*.

Savage. acquainted. He ſtaid, in the midſt of poverty, hunger, and contempt, till the miſtreſs of a coffee houſe, to whom he owed about eight pounds, arreſted him for the debt. He remained for ſome time, at a great expence, in the houſe of the ſheriff's officer, in hopes of procuring bail; which expence he was enabled to defray, by a preſent of five guineas from Mr Naſh at Bath. No bail, however, was to be found; ſo that poor Savage was at laſt lodged in Newgate, a priſon ſo named in Briſtol.

But it was the fortune of this extraordinary mortal always to find more friends than he deſerved. The keeper of the priſon took compaſſion on him, and greatly ſoftened the rigours of his confinement by every kind of indulgence; he ſupported him at his own table, gave him a commodious room to himſelf, allowed him to ſtand at the door of the gaol, and even frequently took him into the fields for the benefit of the air and exerciſe: ſo that, in reality, Savage endured fewer hardſhips in this place than he had uſually ſuffered during the greateſt part of his life.

While he remained in this not intolerable priſon, his ingratitude again broke out, in a bitter ſatire on the city of Briſtol; to which he certainly owed great obligations, notwithſtanding the circumſtances of his arreſt; which was but the act of an individual, and that attended with no circumſtances of injuſtice or cruelty. This ſatire he entitled *London and Briſtol delineated;* and in it he abuſed the inhabitants of the latter, with ſuch a ſpirit of reſentment, that the reader would imagine he had never received any other than the moſt injurious treatment in that city.

When Savage had remained about ſix months in this hoſpitable priſon, he received a letter from Mr Pope, (who ſtill continued to allow him 20 l. a-year) containing a charge of very atrocious ingratitude. What were the particulars of this charge we are not informed; but, from the notorious character of the man, there is reaſon to fear that Savage was but too juſtly accuſed. He, however, ſolemnly proteſted his innocence; but he was very unuſually affected on this occaſion. In a few days after, he was ſeized with a diſorder, which at firſt was not ſuſpected to be dangerous: but growing daily more languid and dejected, at laſt a fever ſeized him; and he expired on the 1ſt of Auguſt 1743, in the 46th year of his age.

Thus lived, and thus died, Richard Savage, Eſq; leaving behind him a character ſtrangely chequered with vices and good qualities. Of the former we have ſeen a variety of inſtances in this abſtract of his life; of the latter, his peculiar ſituation in the world gave him but few opportunities of making any conſiderable diſplay. He was, however, undoubtedly a man of excellent parts; and had he received the full benefits of a liberal education, and had his natural talents been cultivated to the beſt advantage, he might have made a reſpectable figure in life. He was happy in a quick diſcernment, a retentive memory, and a lively flow of wit, which made his company much coveted; nor was his judgment both of writings and of men inferior to his wit: but he was too much a ſlave to his paſſions, and his paſſions were too eaſily excited. He was warm in his friendſhips, but implacable in his enmity; and his greateſt fault, which is indeed the greateſt of all faults, was ingratitude. He ſeemed to think every thing due to his merit, and that he was little obliged to any one for thoſe favours which he thought it their duty to confer on him: it is therefore the leſs to be wondered at, that he never rightly eſtimated the kindneſs of his many friends and benefactors, or preſerved a grateful and due ſenſe of their generoſity towards him. Savage.

The works of this original writer, after having long lain diſperſed in magazines and fugitive publications, have been lately collected and publiſhed in an elegant edition, in 2 vols 8vo; to which are prefixed, the admirable Memoirs of Savage, written by Dr Samuel Johnſon.

Savage is a word ſo well underſtood as ſcarcely to require explanation. When applied to inferior animals, it denotes that they are wild, untamed, and cruel; when applied to man, it is of much the ſame import with *barbarian*, and means a perſon who is untaught and uncivilized, or who is in the rude ſtate of uncultivated nature. That ſuch men exiſt at preſent, and have exiſted in moſt ages of the world, is undeniable: but a queſtion naturally occurs reſpecting the origin of this ſavage ſtate, the determination of which is of conſiderable importance in developing the nature of man, and aſcertaining the qualities and powers of the human mind. Upon this ſubject, as upon moſt others, opinions are very various, and the ſyſtems built upon them are conſequently very contradictory. A large ſect of ancient philoſophers maintained that man ſprung at firſt from the earth like his brother vegetables; that he was without ideas and without ſpeech; and that many ages elapſed before the race acquired the uſe of language, or attained to greater knowledge than the beaſts of the foreſt. Other ſects again, with the vulgar, and almoſt all the poets, maintained that the firſt mortals were wiſer and happier, and more powerful, than any of their offſpring; that mankind, inſtead of being originally ſavages, and riſing to the ſtate of civilization by their own gradual and progreſſive exertions, were created in a high degree of perfection; that, however, they degenerated from that ſtate, and that all nature degenerated with them. Hence the various ages of the world have almoſt every where been compared to gold, ſilver, braſs, and iron, the golden having been always ſuppoſed to be the firſt age.

Since the revival of letters in Europe, and eſpecially during the preſent century, the ſame queſtion has been much agitated both in France and England, and by far the greater part of the moſt faſhionable names in modern ſcience have declared for the original ſavagiſm of men. Such of the ancients as held that opinion were countenanced by the atheiſtic coſmogony of the Phenicians, and by the early hiſtory of their own nations; the moderns build their ſyſtem upon what they ſuppoſe to be the conſtitution of the human mind, and upon the late improvements in arts and ſciences. As the queſtion muſt finally be decided by hiſtorical evidence, before we make our appeal to facts, we ſhall conſider the force of the modern reaſonings from the ſuppoſed innate powers of the human mind; for that reaſoning is totally different from the other, and to blend them together would only prevent the reader from having an adequate conception of either.

Upon the ſuppoſition that all mankind were originally ſavages, deſtitute of the uſe of ſpeech, and, in the ſtricteſt ſenſe of the words, *mutum et turpe pecus*, the

great

Savage. great difficulty is to conceive how they could emerge from a ſtate, and become at laſt enlightened and civilized. The modern advocates for the univerſality of the [illegible] remove this difficulty by a number of inſtincts or moral ſenſes, with which they ſuppoſe the human mind endowed, and by which the ſavage is, without reflection, not only enabled to diſtinguiſh between right and wrong, and prompted to do every thing neceſſary to the preſervation of his exiſtence, and the continuance of the ſpecies, but alſo led to the diſcovery of what will contribute, in the firſt inſtance, to the eaſe and accommodations of life. Theſe inſtincts, they think, brought mankind together when the reaſoning faculty, which had hitherto been dormant, being now roufed by the colliſions of ſociety, made its obſervations upon the conſequences of their different actions, taught them to avoid ſuch as experience ſhowed to be pernicious, and to improve upon thoſe which they found beneficial; and thus was the progreſs of civilization begun. But this theory is oppoſed by objections which we know not how to obviate. The bundle of inſtincts with which modern idleneſs, under the denomination of philoſophy, has ſo amply furniſhed the human mind, is a mere chimera. (See Instinct.) But granting its reality, it is by no means ſufficient to produce the conſequences which are derived from it. That it is not the parent of language, we have ſhown at large in another place (ſee Language, n° 1—7.); and we have the confeſſion of ſome of the ableſt advocates for the original ſavagiſm of man, that large ſocieties muſt have been formed before language could have been invented. How ſocieties, at leaſt large ſocieties, could be formed and kept together without language, we have not indeed been told; but we are aſſured by every hiſtorian and every traveller of credit, that in ſuch ſocieties only have mankind been found civilized. Among known ſavages the ſocial ſtorge is very much confined; and therefore, had it been in the firſt race of men of as enlarged a nature, and as ſafe a guide, as the inſtinctive philoſophers contend that it was, it is plain that thoſe men could not have been ſavages. Such an appetite for ſociety, and ſuch a director of conduct, inſtead of enabling mankind to have emerged from ſavagiſm, would have effectually prevented them from ever becoming ſavage; it would have knit them together from the very firſt, and furniſhed opportunities for the progenitors of the human race to have begun the proceſs of civilization from the moment that they dropt from the hands of their Creator. Indeed, were the modern theories of internal ſenſes and ſocial affections well founded, and were theſe ſenſes and affections ſufficient to have impelled the firſt men into ſociety, it is not eaſy to be conceived how there could be at this day a ſavage tribe on the face of the earth. Natural cauſes, operating in the ſame direction and with the ſame force, muſt in every age produce the ſame effects; and if the ſocial affections of the firſt mortals impelled them to ſociety, and their reaſoning faculties immediately commenced the proceſs of civilization, ſurely the ſame affections and the ſame faculties would in a greater or leſs degree have had the ſame effect in every age and on every tribe of their numerous offſpring; and we ſhould everywhere obſerve mankind advancing in civilization, inſtead of ſtanding ſtill as they often do, and ſometimes retreating by a retrograde motion. This, however, is far from being the caſe. Hordes of ſavages exiſt in almoſt every quarter of the globe; and the Chineſe, who Savage. have undoubtedly been in a ſtate of civilization for at leaſt 2000 years, have during the whole of that long period been abſolutely ſtationary, if they have not loſt ſome of their ancient arts. (See Porcelain). The origin of civilization, therefore, is not to be looked for in human inſtincts or human propenſities, carrying men forward by a natural progreſs; for the ſuppoſition of ſuch propenſities is contrary to fact; and by fact and hiſtorical evidence, in conjunction with what we know of the nature of man, muſt this great queſtion be at laſt decided.

In the article Religion, n° 7. it has been ſhewn that the firſt men, if left to themſelves without any inſtruction, inſtead of living the life of ſavages, and in proceſs of time advancing towards civilization, muſt have periſhed before they acquired even the uſe of ſome of their ſenſes. In the ſame article it has been ſhown (n° 14—17.), that Moſes, as he is undoubtedly the oldeſt hiſtorian extant, wrote likewiſe by immediate inſpiration; and that therefore, as he repreſents our firſt parents and their immediate deſcendants as in a ſtate far removed from that of ſavages, it is vain to attempt to deduce the originality of ſuch a ſtate from hypothetical theories of human nature. We have, indeed, heard it obſerved by ſome of the advocates for the antiquity and univerſality of the ſavage ſtate, that to the appeal to revelation they have no objection, provided we take the Moſaic account as it ſtands, and draw not from it concluſions which it will not ſupport.

They contend, at the ſame time, that there is no argument fairly deducible from the book of Geneſis which militates againſt their poſition. Now we beg leave to remark, that beſides the reaſoning which we have already uſed in the article juſt referred to, we have as much poſitive evidence againſt their poſition as the nature of the Moſaic hiſtory could be ſuppoſed to afford.

We are there told that God created man after his own image; that he gave him dominion over every thing in the ſea, in the air, and over all the earth; that he appointed for his food various kinds of vegetables; that he ordained the Sabbath to be obſerved by him, in commemoration of the works of creation; that he prepared for him a garden to till and to dreſs; and that, as a teſt of his religion and ſubmiſſion to his Creator, he forbade him, under ſevere penalties, to eat of a certain tree in that garden. We are then told that God brought to him every animal which had been created; and we find that Adam was ſo well acquainted with their ſeveral natures as to give them names. When too an helpmate was provided for him, he immediately acknowledged her as bone of his bone, fleſh of his fleſh, and called her *woman*, becauſe ſhe was taken out of man.

How theſe facts can be reconciled to a ſtate of ignorant ſavagiſm is to us abſolutely inconceivable; and it is indeed ſtrange, that men who profeſs Chriſtianity ſhould appeal to reaſon, and ſtick by its deciſion on a queſtion which revelation has thus plainly decided againſt them. But it is agreeable to their theory to believe that man roſe by ſlow ſteps to the full uſe of his reaſoning powers. To us, on the other hand, it appears equally plauſible to ſuppoſe that our firſt parents were created, not in full maturity, but mere infants, and that they went through the tedious proceſs of childhood and youth,

Savage. youth, &c. as to suppose that their minds were created weak, uninformed, and uncivilized, as are those of savages.

But if it be granted that Adam had a tolerable share of knowledge, and some civilization, nothing can be more natural than to suppose that he would teach his descendants what he knew himself; and if the Scriptures are to be believed, we are certain that some of them possessed more than savage knowledge, and better than savage manners. But instead of going on to further perfection, as the theory of modern philosophers would lead us to suppose, we find that mankind degenerated in a most astonishing degree; the causes of which we have already in part developed in the article POLYTHEISM, n° 4, &c.

This early degeneracy of the human race, or their sudden progress towards ignorance and savagism, appears to lead to an important consequence. If men so very soon after their creation, possessing, as we have seen they did, a considerable share of knowledge and of civilization, instead of improving in either, degenerated in both respects, it would not appear that human nature has that strong propensity to refinement which many philosophers imagine; or that had all men been originally savage, they would have civilized themselves by their own exertions.

Of the ages before the flood we have no certain account any where but in Scripture; where, though we find mankind represented as very wicked, we have no reason to suppose them to have been absolute savages. On the contrary, we have much reason, from the short account of Moses, to conclude that they were far advanced in the arts of civil life. Cain, we are told, built a city; and two of his early descendants invented the harp and organ, and were artificers in brass and iron. Cities are not built, nor musical instruments invented by savages, but by men highly cultivated: and surely we have no reason to suppose that the righteous posterity of Seth were behind the apostate descendants of Cain in any branch of knowledge that was really useful. That Noah and his family were far removed from savagism, no one will controvert who believes that with them was made a new covenant of religion; and it was unquestionably their duty, as it must otherwise have been their wish, to communicate what knowledge they possessed to their posterity. Thus far then every consistent Christian, we think, must determine against original and universal savagism.

In the preliminary discourse to Sketches of the History of Man, Lord Kames would infer, from some facts which he states, that many pairs of the human race were at first created, of very different forms and natures, but all depending entirely on their own natural talents. But to this statement he rightly observes, that the Mosaic account of the Creation opposes insuperable objections. "Whence then (says his Lordship) the degeneracy of all men into the savage state? To account for that dismal catastrophe, mankind must have suffered some dreadful convulsion." Now, if we mistake not, this is taking for granted the very thing to be proved. We deny that at any period since the creation of the world, *all* men were sunk into the state of savages; and that they were, no proof has yet been brought, nor do we know of any that can be brought, unless our fashionable philosophers choose to prop their theories by the buttress of Sanchoniatho's Phenician cosmogony. (See SANCHONIATHO.) His Lordship, however, goes on to say, or rather to *suppose*, that the confusion at Babel, &c. was this dreadful convulsion: For, says he, "by confounding the language of men, and scattering them abroad upon the face of all the earth, they were rendered savages." Here again we have a positive assertion, without the least shadow of proof; for it does not at all appear that the confusion of language, and the scattering abroad of the people, was a circumstance such as could induce universal savagism. There is no reason to think that all the men then alive were engaged in building the tower of Babel; nor does it appear from the Hebrew original that the language of those who were engaged in it was so much changed as the reader is apt to infer from our English version. (See PHILOLOGY, n° 8—16.) That the builders were *scattered*, is indeed certain; and if any of them were driven, in very small tribes, to a great distance from their brethren, they would, in process of time inevitably become savages. (See POLYTHEISM, n° 4—6, and LANGUAGE, n° 7.); but it is evident, from the Scripture account of the peopling of the earth, that the descendants of Shem and Japheth were not scattered over the face of all the earth, and that therefore they could not be rendered savage by the catastrophe at Babel. In the chapter which relates that wonderful event, the generations of Shem are given in order down to Abram; but there is no indication that they had suffered with the builders of the tower, or that any of them had degenerated into the state of savages. On the contrary, they appear to have possessed a considerable degree of knowledge; and if any credit be due to the tradition which represents the father of Abraham as a statuary, and himself as skilled in the science of astronomy, they must have been far advanced in the arts of refinement. Even such of the posterity of Ham as either emigrated or were driven from the plain of Shinar in large bodies, so far from sinking into savagism, retained all the accomplishments of their antediluvian ancestors, and became afterwards the instructors of the Greeks and Romans. This is evident from the history of the Egyptians and other eastern nations, who in the days of Abraham were powerful and highly civilized. And that for many ages they did not degenerate into barbarism, is apparent from its having been thought to exalt the character of Moses, that he was learned in all the wisdom of the Egyptians, and from the wisdom of Solomon having been said to excel all the wisdom of the east country and of Egypt.

Thus decided are the Scriptures of the Old Testament against the universal prevalence of savagism in that period of the world; nor are the most authentic Pagan writers of antiquity of a different opinion. Mochus the Phenician *, Democritus, and Epicurus, appear to be the first champions of the savage state, and they are followed by a numerous body of poets and rhapsodists, among the Greeks and Romans, who were unquestionably devoted to fable and fiction. The account which they have given of the origin of man, the reader will find in another place (see THEOLOGY, Part i. sect. 1.): But we hardly think that he will employ it in support of the fashionable doctrine of original savagism. Against the wild reveries of this school are posted all the leaders of the other sects, Greeks and barbarians; the philosophers

* Strabo, lib. xvi. Diog. Laert. Vita Democr. et Vita Epicuri.

Savage. sophers of both Academies, the sages of the Italian and Alexandrian schools; the magi of Persia; the Brahmins of India, and the Druids of Gaul, &c. The testimony of the early historians among all the ancient nations, indeed, who are avowedly fabulists, is very little to be depended on, and has been called in question by the most judicious writers of Pagan antiquity. (See *Plutarch Vita Thes. sub init. Thucyd.* l. 1. cap. 1. *Strabo*, l. 11. p. 507. *Livy Prof.* and *Varro ap. August de Civ. Dei.*) The more populous and extensive kingdoms and societies were civilized at a period prior to the records of profane history: the presumption, therefore, without taking revelation into the account, certainly is, that they were civilized from the beginning. This is rendered further probable from other circumstances. To account for their system, the advocates of savagism are obliged, as we have seen, to have recourse to numerous suppositions. They imagine, that since the creation dreadful convulsions have happened, which have spread ruin and devastation over the earth, which have destroyed learning and the arts, and brought on savagism by one sudden blow. But this is reasoning at random, and without a vestige of probability: for the only convulsion that can be mentioned is that at Babel, which we have already shown to be inadequate.

Further, it does not appear that any people who were once civilized, and in process of time had degenerated into the savage or barbarous state, have ever recovered their pristine condition without foreign aid. From whence we conclude, that man, once a savage, would never have raised himself from that hopeless state. This appears evident from the history of the world; for that it requires strong incitements to keep man in a very high state of knowledge and civilization, is evident from what we know of the numerous nations which were famed in antiquity, but which are now degenerated in an astonishing degree. That man cannot, or, which is the same thing, has not risen from barbarism to civilization and science by his own efforts and natural talents, appears further from the following facts. The rudiments of all the learning, religion, laws, arts, and sciences, and other improvements that have enlightened Europe, a great part of Asia, and the northern coast of Africa, were so many rays diverging from two points, on the banks of the Euphrates and the Nile. In proportion as nations receded from these two sources of humanity and civilization, in the same proportion were they more and more immersed in ignorance and barbarism. The Greeks had made no progress towards civilization when the Titans first, and afterwards colonies from Egypt and Phenicia, taught them the very elements of science and urbanity *. The aborigines of Italy were in the same state prior to the arrival of the Pelasgi, and the colonies from Arcadia and other parts of Greece. Spain was indebted for the first seeds of improvement to the commercial spirit of the Phenicians. The Gauls, the Britons, and the Germans, derived from the Romans all that in the early periods of their history they knew of science, or the arts of civil life, and so on of other nations in antiquity. The same appears to be the case in modern times. The countries which have been discovered by the restless and inquisitive spirit of Europeans have been generally found in the lowest state of savagism; from which, if they have emerged at all, it has been exactly in proportion to their connection with the inhabitants of Europe. Even western Europe itself, when sunk in ignorance during the reign of monkery, did not recover by the efforts of its own inhabitants. Had not the Greeks, who in the 15th century took refuge in Italy from the cruelty of the Turks, brought with them their ancient books, and taught the Italians to read them, we who are disputing about the origin of the savage state, and the innate powers of the human mind, had at this day been gross and ignorant savages ourselves, incapable of reasoning with accuracy upon any subject. That we have now advanced far before our masters is readily admitted; for the human mind, when put on the right track, and spurred on by emulation and other incitements, is capable of making great improvements: but between improving science, and emerging from savagism, every one perceives there is an immense difference.

* See Titans.

Lord Kames observes, that the people who inhabit a grateful soil, where the necessaries of life are easily procured, are the first who invent useful and ingenious arts, and the first who figure in the exercises of the mind. But the Egyptians and Chaldeans, who are thought to support this remark, appear from what we have seen to have derived their knowledge from their antediluvian progenitors, and not from any advantages of situation or strength of genius. Besides, the inhabitants of a great part of Africa, of North and South America, and of many of the islands lately discovered, live in regions equally fertile, and equally productive of the necessaries of life, with the regions of Chaldee and Egypt; yet these people have been savages from time immemorial, and continue still in the same state. The Athenians, on the other hand, inhabited the most barren and ungrateful region of Greece, while their perfection in the arts and sciences has never been equalled. The Norwegian colony which settled in Iceland about the beginning of the 8th century, inhabited a most bleak and barren soil, and yet the fine arts were eagerly cultivated in that dreary region when the rest of Europe were sunk in ignorance and barbarism. Again, there are many parts of Africa, and of North and South America, where the soil is neither so luxuriant as to beget indolence, nor so barren and ungrateful as to depress the spirits by labour and poverty; where, notwithstanding, the inhabitants still continue in an uncultured state. From all which, and from numerous other instances which our limits permit us not to bring forward, we infer that some external influence is necessary to impel towards the civilization of savages; and that in the history of the world, or the nature of the thing, we find no instance of any people emerging from barbarism by the progressive efforts of their own genius. On the contrary, as we find in societies highly cultivated and luxurious a strong tendency to degenerate, so in savages we not only find no mark of tendency to improvement, but rather a rooted aversion to it. Among them, indeed, the social appetite never reaches beyond their own horde. It is, therefore, too weak and too confined to dispose them to unite in large communities; and of course, had all mankind been once in the savage state, they never could have arrived at any considerable degree of civilization.

Instead of trusting to any such natural progress, as is contended for, the Providence of Heaven, in pity to the human race, appears at different times, and in different

Savage, Savanna-la-Mar

ferent countries, to have raiſed up ſome perſons endowed with ſuperior talents, or, in the language of poetry, ſome heroes, demi gods, or god like men, who having themſelves acquired ſome knowledge in nations already civilized, by uſeful inventions, legiſlation, religious inſtitutions, and moral arrangement, ſowed the firſt ſeeds of civilization among the hordes of wandering diſunited barbarians. Thus we find the Chineſe look up to their Fohee, the Indians to Brahma, the Perſians to Zoroaſter, the Chaldeans to Oanes, the Egyptians to Thoth, the Phenicians to Melicerta, the Scandinavians to Odin, the Italians to Janus, Saturn, and Picus, and the Peruvians to Manco. In latter times, and almoſt within our own view, we find the barbarous nations of Ruſſia reduced to ſome order and civilization by the aſtoniſhing powers and exertions of Peter the Great. The endeavours of ſucceeding monarchs, and eſpecially of the preſent empreſs, have powerfully contributed to the improvement of this mighty empire. In many parts of it, however, we ſtill find the inhabitants in a ſtate very little ſuperior to ſavagiſm; and through the moſt of it, the lower, and perhaps the middling orders, appear to retain an almoſt invincible averſion to all further progreſs*. A fact which, when added to numerous others of a ſimilar nature which occur in the hiſtory of the world, ſeems to prove indiſputably that there is no ſuch natural propenſity to improvement in the human mind as we are taught by ſome authors to believe. The origin of ſavagiſm, if we allow mankind to have been at firſt civilized, is eaſily accounted for by natural means: The origin of civilization, if at any period the whole race were ſavages, cannot, we think, be accounted for otherwiſe than by a miracle, or repeated miracles.

* See Ruſſia.

To many perſons, in the preſent day eſpecially, the doctrine we have now attempted to eſtabliſh, will appear very humiliating; and perhaps it is this alone that has prevented many from giving the ſubject ſo patient a hearing as its importance ſeems to require. It is a faſhionable kind of philoſophy to attribute to the human mind very pre-eminent powers; which ſo flatter our pride, as in a great meaſure, perhaps, to pervert our reaſon, and blind our judgment. The hiſtory of the world, and of the diſpenſations of God to man, are certainly at variance with the popular doctrine reſpecting the origin of civilization; for if the human mind be poſſeſſed of that innate vigour which that doctrine attributes to it, it will be extremely difficult to account for thoſe numerous facts which ſeem with irreſiſtible evidence to proclaim the contrary; for that unceaſing care with which the Deity appears to have watched over us; and for thoſe various and important revelations He has vouchſafed to us. Let us rejoice and be thankful that we are men, and that we are Chriſtians; but let not a vain philoſophy tempt us to imagine that we are angels or gods.

Savage-Iſland, one of the ſmall iſlands in the South Sea, lying in S. Lat. 19. 1. W. Long. 169. 37. It is about ſeven leagues in circuit, of a good height, and has deep water cloſe to its ſhores. Its interior parts are ſuppoſed to be barren, as there was no ſoil to be ſeen upon the coaſt; the rocks alone ſupplying the trees with humidity. The inhabitants are exceedingly warlike and fierce, ſo that Captain Cook could not have any intercourſe with them.

SAVANNA-LA-MAR, a town of Jamaica, ſituated in the county of Cornwall [illegible]. It is the county-town, where the aſſize-courts are held, the Lift Tuesday in March, June, September, and December. It has lately been ornamented by a handſome court-houſe, and contains about 120 other houſes. It belongs to Westmoreland parish, in which are 69 ſugar-eſtates, 106 other eſtates, and 18,000 ſlaves.

SAVANNAH, a port of entry and poſt-town in Georgia, formerly the metropolis of that ſtate. It is ſituated in Chatham county, on the ſouth ſide of Savannah river upon a high ſandy bluff, elevated about 50 feet above the river, and 17 miles above its confluence with the ocean. The town is regularly laid out, in the form of a parallellogram, and contains 2,500 inhabitants; about 80 or 90 of theſe are Jews. The public buildings are a Preſbyterian, an Epiſcopalian, a German Lutheran church, a Jewiſh ſynagogue, and a court-houſe. It is 120 miles from Auguſta, and 878 S. W. by S. of Philadelphia. W. Long. 101. 20. N. Lat. 32. 0.

Savannah, a large navigable river of Georgia, which is formed by the union of the Tugelo and Keowee rivers, that riſe in the Appalachian mountains; theſe confluent rivers aſſume the name of Savannah, which purſuing a S. E. courſe, paſſes by Peterſburg, and receives from the N. W. Broad river, a conſiderable ſtream, thence continuing a S. E. courſe, enters the Atlantic, in Lat. 32. after paſſing by Auguſta, Ebenezer, and Savannah: to the latter it is navigable in large veſſels, having generally 16 feet water at half-tides, and in boats of 100 feet keel, carrying 80 or 90 hogſheads of tobacco, to Auguſta, where it is about 250 yards wide, and from 10 to 15 feet deep. The navigation is obſtructed about 3 miles above Auguſta, by falls, but after paſſing theſe it is navigable to the mouth of Tugelo river. In high floods the falls are frequently paſſed by loaded boats. The great number of logs and ſtumps which are concealed under water, have often overſet boats; and render the navigation of this river ſomewhat dangerous. In the year 1790 nearly 200 hogſheads of tobacco were loſt in paſſing down the river.

SAVARY (James), an eminent French writer on the ſubject of trade, was born at Done, in Anjou, in 1622. Being bred to merchandize, he continued in trade until 1658; when he left off the practice, to cultivate the theory. He had married in 1650; and in 1660, when the king declared a purpoſe of aſſigning privileges and penſions to ſuch of his ſubjects as had twelve children alive, Mr Savary was not too rich to put in his claim to the royal bounty. He was afterwards admitted of the council for the reformation of commerce; and the orders which paſſed in 1670 were drawn up by his inſtructions and advice. He wrote *Le Parfait Negociant*, 4to; and, *Avis et conſeils ſur les plus importantes matieres du Commerce*, in 4to. He died in 1690; and out of 17 children whom he had by one wife, left 11. Two of his ſons, James and Philemon Lewis, laboured jointly on a great work, *Dictionnaire Univerſelle du Commerce*, 2 vols folio. This work was begun by James, who was inſpector-general of the manufactures at the cuſtomhouſe, Paris; who called in the aſſiſtance of his brother Philemon Lewis, although a canon of the royal church of St Maur; and by his death left him to finiſh it. This work appeared in 1723, and Philemon afterwards added a third ſupplemental volume to the former. Poſtlethwayte's Engliſh Dictionary of Trade

Savary. and Commerce, is a tranſlation, with conſiderable improvements, from Savary.

Savary, an eminent French traveller and writer, was born at Vitre, in Brittany, about the year 1748. He ſtudied with applauſe at Rennes, and in 1776 travelled into Egypt, where he remained almoſt three years. During this period he was wholly engaged in the ſtudy of the Arabian language, in ſearching out ancient monuments, and in examining the national manners. After making himſelf acquainted with the knowledge and philoſophy of Egypt, he viſited the iſlands in the Archipelago, where he ſpent 18 months. On his return to France, in 1780, he publiſhed, 1. A Tranſlation of the Koran, with a ſhort Life of Mahomet, in 1783, 2 vols 8vo. 2. The Morality of the Koran, or a collection of the moſt excellent Maxims in the Koran; a work extracted from his tranſlation, which is eſteemed both elegant and faithful. 3. Letters on Egypt, in 3 vols 8vo, in 1785. In theſe the author makes his obſervations with accuracy, paints with vivacity, and renders intereſting every thing he relates. His deſcriptions are in general faithful, but are perhaps in ſome inſtances too much ornamented. He has been juſtly cenſured for painting modern Egypt and it inhabitants in too high colours. Theſe letters, however, were bought up by the curious public, and read with pleaſure and advantage. Encouraged by this flattering reception, he prepared his letters upon Greece. He died ſoon after at Paris of a malady contracted from too intenſe application. A ſenſible obſtruction in the right lobe of the liver had made a deciſive progreſs, which the return of ſummer, ſome ſimple medicines, a ſtrict regimen, and travelling, ſeemed to remove.

On his return into the country adjacent to Paris, his health however was ſtill doubtful; for it is well known that when the organization of one of the viſcera has been much deranged, deep traces of it will ever remain. His active mind, however, made him regardleſs of his health, and he conceived it his duty to profit by thoſe appearances of recovery which he experienced at the cloſe of the ſummer and the beginning of autumn, to put into order his travels into the iſlands of the Archipelago, intended as a continuation of his letters on Egypt. His warmth of temper was exaſperated by ſome lively criticiſms which had been made on his former productions, and he gave himſelf up to ſtudy with a degree of activity of which the conſequences were ſufficiently obvious. An obſtruction in the liver again took place, and made a new progreſs; his digeſtion became extremely languid; ſleep quite forſook him, both by night and by day; a dry and troubleſome cough came on; his face appeared bloated, and his legs more and more inflamed. The uſe of barley-water and cream of tartar ſtill however promoted, in ſome degree, the urinary ſecretions, and afforded ſome little glimmering of hope. In this ſituation he returned to Paris in the beginning of the year 1788, to attend to the publication of his new work concerning the iſlands of the Archipelago, particularly the iſle of Candia. He had then all the ſymptoms of a dangerous dropſy, which became ſtill more alarming from the very exhauſted ſtate of the viſcera. The right lobe of the liver was extremely hard and ſenſible. The patient had ſhiverings without any regular returns, and his ſtrength was undermined by a hectic fever. At the ſame time ſtill more uneaſy ſymptoms took place, thoſe of a dropſy in the cheſt; but the circumſtances which deſtroyed all hope, and announced his approaching diſſolution, were a ſevere pain in the left ſide, with a very troubleſome cough, and a copious and bloody expectoration *(in hepaticis, ſays Hippocrates, ſputum cruentum mortiferum)*; his reſpiration became more and more difficult; his ſtrength was exhauſted, and his death took place on the 4th of February 1788, attended with every indication of the moſt copious overflowing in the cheſt, and of an abſceſs in the liver.—Thus was deſtroyed, in the vigour of his age, an author whoſe character and talents rendered him worthy of the happieſt lot.

Sauciſſe || Savile.

Mr Savary's genius was lively and well cultivated; his heart warm and benevolent; his imagination vigorous; his memory retentive. He was cheerful and open; and had ſo great a talent for telling a ſtory, that his company was not leſs agreeable than inſtructive. He did not mingle much with the world, but was ſatisfied with performing well the duties of a ſon, of a brother, and of a friend.

SAUCISSE, or Saucisson, in mining, is a long pipe or bag made of cloth well pitched, or ſometimes of leather, of about an inch and a half diameter, filled with powder, going from the chamber of the mine to the entrance of the gallery. It is generally placed in a wooden pipe called an *auget*, to prevent its growing damp. It ſerves to give fire to mines, caſſions, bomb-cheſts, &c.

Saucisson, is likewiſe a kind of faſcine, longer than the common ones; they ſerve to raiſe batteries and to repair breaches. They are alſo uſed in making epaulements, in ſtopping paſſages, and in making traverſes over a wet ditch, &c.

SAVE, a river of Germany, which has its ſource in Upper Carniola, on the frontiers of Carinthia.—It runs through Carniola from weſt to eaſt, afterwards ſeparates Sclavonia from Croatia, Boſnia, and part of Servia, and then falls into the Danube at Belgrade.

SAVER-KROUT. See Croute.

SAVERNAKE-Forest is ſituated near Marlborough in Wiltſhire, and is 12 miles in circumference, well ſtocked with deer, and delightful from the many viſtas cut through the woods and coppices with which it abounds. Eight of theſe viſtas meet, like the rays of a ſtar, in a point near the middle of the foreſt, where an octagon tower is erected to correſpond with the viſtas; through one of which is a view of Tottenham Park, Lord Ailesbury's ſeat, a ſtately edifice erected after the model, and under the direction, of the modern Vitruvius, the earl of Burlington, who to the ſtrength and convenience of the Engliſh architecture has added the elegance of the Italian.

SAVILE (Sir George), afterwards marquis of Halifax, and one of the greateſt ſtateſmen of his time, was born about the year 1630; and ſome time after his return from his travels was created a peer, in conſideration of his own and his father's merits. He was a ſtrenuous oppoſer of the bill of excluſion; but propoſed ſuch limitations of the duke of York's authority, as ſhould diſable him from doing any harm either in church or ſtate, as the taking out of his hands all power in eccleſiaſtical matters, the diſpoſal of the public money, and the power of making peace and war; and lodging theſe in the two houſes of parliament. After that bill was rejected in the houſe of lords, he preſſed them, though without ſucceſs, to proceed to the limitation of the

Savin || Saumur.

the duke's power; and began with moving, that during the king's life he might be obliged to live five hundred miles out of England. In Auguſt 1682 he was created a marquis, and ſoon after made privy-ſeal. Upon King James's acceſſion, he was made preſident of the council; but on his refuſal to conſent to the repeal of the teſt, he was diſmiſſed from all public employments. In that aſſembly of the lords which met after king James's withdrawing himſelf the firſt time from Whitehall, the marquis was choſen their preſident; and upon the king's return from Feverſham, he was ſent, together with the earl of Shrewſbury and lord Delamere, from the prince of Orange, to order his majeſty to quit the palace at Whitehall. In the convention of parliament he was choſen ſpeaker of the houſe of lords, and ſtrenuouſly ſupported the motion for the vacancy of the throne, and the conjunctive ſovereignty of the prince and princeſs; upon whoſe acceſſion he was again made privy-ſeal. Yet, in 1689, he quitted the court, and became a zealous oppoſer of the meaſures of government till his death, which happened in April 1695. The rev. Mr Grainger obſerves, that "he was a perſon of unſettled principles, and of a lively imagination, which ſometimes got the better of his judgment. He would never loſe his jeſt, though it ſpoiled his argument, or brought his ſincerity or even his religion in queſtion. He was deſervedly celebrated for his parliamentary talents; and in the famous conteſt relating to the bill of excluſion was thought to be a match for his uncle Shafteſbury. The pieces he has left us ſhow him to have been an ingenious, if not a maſterly writer; and his *Advice to a Daughter* contains more good ſenſe in fewer words than is, perhaps, to be found in any of his contemporary authors." His lordſhip alſo wrote, The Anatomy of an Equivalent; a Letter to a Diſſenter; a Rough Draught of a New Model at Sea; and Maxims of State; all which were printed together in one volume 8vo.—Since theſe were alſo publiſhed under his name the character of king Charles II. 8vo; the Character of Biſhop Burnet, and Hiſtorical Obſervations upon the reigns of Edward I. II. III. and Richard II. with Remarks upon their faithful Counſellors and falſe Favourites.

SAVIN, in botany. See JUNIPERUS.

SAVIOUR, an appellation peculiarly given to Jeſus Chriſt, as being the Meſſiah and Saviour of the world. See JESUS.

Order of St Saviour, a religious order of the Romiſh Church, founded by St Bridget, about the year 1345, and ſo called from its being pretended that our Saviour himſelf declared its conſtitution and rules to the foundreſs. According to the conſtitutions, this is principally founded for religious women who pay a particular honour to the holy virgin; but there are ſome monks of the order, to adminiſter the ſacrament and ſpiritual aſſiſtance to the nuns.

SAUL the ſon of Kiſh, of the tribe of Benjamin, was the firſt king of the Iſraelites. On account of his diſobedient conduct, the kingdom was taken from his family, and given to David. See the Firſt Book of Samuel.

SAUL, otherwiſe called Paul. See PAUL.

SAUMUR, a conſiderable town of France, in Anjou, and capital of the Saumarois, with an ancient caſtle. The town is ſmall, but pleaſantly ſituated on the Loire, acroſs which is a long bridge, continued through a number of iſlands. Saumur was anciently a moſt important paſs over the river, and of conſequence was frequently and fiercely diſputed by either party, during the civil wars of France in the ſixteenth century. The fortifications are of great ſtrength, and Henry the Fourth, on the reconciliation which took place between him and Henry the Third, near Tours, in 1589, demanded that Saumur ſhould be delivered to him, as one of the cities of ſafety. The caſtle overlooks the town and river. It is built on a lofty eminence, and has a venerable and magnificent appearance, and was lately uſed as a priſon of ſtate, where perſons of rank were frequently confined. The kings of Sicily, and dukes of Anjou of the houſe of Valois, who deſcended from John king of France, often reſided in the caſtle of Saumur, as it conſtituted a part of their Angevin dominions. E. Long. 0. 2. N. Lat. 47. 15.

Saunders || Saunderſon

SAUNDERS, a kind of wood brought from the Eaſt Indies, of which there are three kinds; white, yellow, and red. See PTEROCARPUS and SANTALUM.

SAUNDERSON (Dr Robert), an eminent caſuiſt, was born at Rotherham, in Yorkſhire, on the 19th September 1587, and was deſcended of an ancient family. He attended the grammar-ſchool at Rotherham, where he made ſuch wonderful proficiency in the languages, that at 13 it was judged proper to ſend him to Lincoln college, Oxford. In 1608 he was appointed logic reader in the ſame college. He took orders in 1611, and was promoted ſucceſſively to ſeveral benefices. Archbiſhop Laud recommended him to king Charles I. as a profound caſuiſt; and that monarch, who ſeems to have been a great admirer of caſuiſtical learning, appointed him one of his chaplains in 1631. Charles propoſed ſeveral caſes of conſcience to him, and received ſo great ſatisfaction from his anſwers, that at the end of his month's attendance he told him, that he would wait with impatience during the intervening 11 months, as he was reſolved to be more intimately acquainted with him, when it would again be his turn to officiate. The king regularly attended his ſermons, and was wont to ſay, that "he carried his ears to hear other preachers, but his conſcience to hear Mr Saunderſon."

In 1642 Charles created him regius profeſſor of divinity at Oxford, with the canonry of Chriſt church annexed: but the civil wars prevented him till 1646 from entering on the office; and in 1648 he was ejected by the viſitors which the parliament had commiſſioned. He muſt have ſtood high in the public opinion; for in the ſame year in which he was appointed profeſſor of divinity, both houſes of parliament recommended him to the king as one of their truſtees for ſettling the affairs of the church. The king, too, repoſed great confidence in his judgment, and frequently conſulted him about the ſtate of his affairs. When the parliament propoſed the abolition of the epiſcopal form or church-government as incompatible with monarchy, Charles deſired him to take the ſubject under his conſideration and deliver his opinion. He accordingly wrote a treatiſe entitled, Epiſcopacy as eſtabliſhed by law in England not prejudicial to regal power.

Dr Saunderſon was taken priſoner by the parliament's troops and conveyed to Lincoln, in order to procure in exchange a Puritan divine named *Clark*, whom the king's army had taken. The exchange was agreed to, on condition that Dr Saunderſon's living

Saunderſon should be reſtored, and his perſon and property remain unmoleſted. The firſt of theſe demands was readily complied with: and a ſtipulation was made, that the ſecond ſhould be obſerved; but it was impoſſible to reſtrain the licentiouſneſs of the ſoldiers. They entered his church in the time of divine ſervice, interrupted him when reading prayers, and even had the audacity to take the common prayer book from him, and to tear it to pieces.

The Honourable Mr Boyle, having read a work of Dr Saunderſon's entitled *De juramenti obligatione*, was ſo much pleaſed, that he inquired at Biſhop Barlow, whether he thought it was poſſible to prevail on the author to write Caſes of Conſcience, if an honorary penſion was aſſigned him to enable him to purchaſe books, and pay an amanuenſis. Saunderſon told Barlow, "that if any future tract of his could be of any uſe to mankind, he would cheerfully ſet about it without a penſion." Boyle, however, ſent him a preſent of 50l. ſenſible, no doubt, that, like the other royaliſts, his finances could not be great. Upon this Saunderſon publiſhed his book *De Conſcientia*.

When Charles II. was reinſtated in the throne, he recovered his profeſſorſhip and canonry, and ſoon after was promoted to the biſhopric of Lincoln. During the two years and a half in which he poſſeſſed this new office, he ſpent a conſiderable ſum in augmenting poor vicarages, in repairing the palace at Bugden, &c. He died January 29, 1662-3, in his 76th year.

He was a man of great acuteneſs and ſolid judgment. "That ſtaid and well-weighed man Dr Saunderſon (ſays Dr Hammond) conceives all things deliberately, dwells upon them diſcreetly, diſcerns things that differ exactly, paſſeth his judgment rationally, and expreſſes it aptly, clearly, and honeſtly." Being aſked, what books he had read moſt? he replied, that "he did not read many books, but thoſe which he did read were well choſen and frequently peruſed." Theſe, he ſaid, were chiefly three, Ariſtotle's Rhetoric, Aquinas's *Secunda Secundæ*, and Tully's Works; eſpecially his Offices, which he had not read over leſs than 20 times, and could even, in his old age, recite without book." He added, that "the learned civilian Dr Zouch had written *Elementa juris prudentiæ*, which he thought he could alſo ſay without book, and that no wiſe man could read it too often."

It will now be proper to give a ſhort account of his works. 1. In 1615 he publiſhed *Logicæ Artis Compendium*, which was the ſyſtem of lectures he had delivered in the Univerſity when he was logic-reader. 2. Sermons, amounting in number to 36, printed in 1681, folio, with the author's life by Walton. 3. Nine Caſes of Conſcience reſolved; firſt collected in one volume, in 1678, 8vo. 4. *De juramenti obligatione*. This book was tranſlated into Engliſh by Charles I. while a priſoner in the Iſle of Wight, and printed at London in 1665, 8vo. 5. *De Obligatione conſcientiæ*. 6. Cenſure of Mr Antony Aſcham, his book of the confuſions and revolutions of government. 7. *Pax Eccleſiæ* concerning Predeſtination, or the five points. 8. Epiſcopacy, as eſtabliſhed by Law in England, not prejudicial to the regal power, in 1661. Beſides theſe, he wrote two Diſcourſes in defence of Uſher's writings.

Saunderſon (Dr Nicolas), was born at Thurlſtone in Yorkſhire in 1682, and may be conſidered as a prodigy for his application and ſucceſs in mathematical literature in circumſtances apparently the moſt unfavourable. He loſt his ſight by the ſmall-pox before he was a year old. But this diſaſter did not prevent him from ſearching after that knowledge for which nature had given him ſo ardent a deſire. He was initiated into the Greek and Roman authors at a free-ſchool at Penniſton. After ſpending ſome years in the ſtudy of the languages, his father (who had a place in the exciſe) began to teach him the common rules of arithmetic. He ſoon ſurpaſſed his father; and could make long and difficult calculations, without having any ſenſible marks to aſſiſt his memory. At 18 he was taught the principles of algebra and geometry by Richard Weſt of Undoorbank, Eſq; who, though a gentleman of fortune, yet, being ſtrongly attached to mathematical learning, readily undertook the education of ſo uncommon a genius. Saunderſon was alſo aſſiſted in his mathematical ſtudies by Dr Nettleton. Theſe two gentlemen read books to him and explained them. He was next ſent to a private academy at Attercliff near Sheffield, where logic and metaphyſics were chiefly taught. But theſe ſciences not ſuiting his turn of mind, he ſoon left the academy. He lived for ſome time in the country without any inſtructor; but ſuch was the vigour of his own mind, that few inſtructions were neceſſary: he only required books and a reader.

His father, beſides the place he had in the exciſe, poſſeſſed alſo a ſmall eſtate; but having a numerous family to ſupport, he was unable to give him a liberal education at one of the univerſities. Some of his friends who had remarked his perſpicuous and intereſting manner of communicating his ideas, propoſed that he ſhould attend the univerſity of Cambridge as a teacher of mathematics. This propoſal was immediately put in execution; and he was accordingly conducted to Cambridge in his 25th year by Mr Joſhua Dunn, a fellow-commoner of Chriſt's college. Though he was not received as a member of the college, he was treated with great attention and reſpect. He was allowed a chamber, and had free acceſs to the library. Mr Whiſton was at that time profeſſor of mathematics; and as he read lectures in the way that Saunderſon intended, it was naturally to be ſuppoſed he would view his project as an invaſion of his office. But, inſtead of meditating any oppoſition, the plan was no ſooner mentioned to him than he gave his conſent. Saunderſon's reputation was ſoon ſpread through the univerſity. When his lectures were announced, a general curioſity was excited to hear ſuch intricate mathematical ſubjects explained by a man who had been blind from his infancy. The ſubject of his lectures was the *Principia Mathematica*, the Optics, and *Arithmetica Univerſalis* of Sir Iſaac Newton. He was accordingly attended by a very numerous audience. It will appear at firſt incredible to many that a blind man ſhould be capable of explaining optics, which requires an accurate knowledge of the nature of light and colours; but we muſt recollect, that the theory of viſion is taught entirely by lines, and is ſubject to the rules of geometry.

While thus employed in explaining the principles of the Newtonian philoſophy, he became known to its illuſtrious author. He was alſo intimately acquainted with Halley, Cotes, De Moivre, and other eminent mathematicians. When Whiſton was removed from his profeſſor-

Saunderſon professorship, Saunderſon was univerſally allowed to be the man beſt qualified for the ſucceſſion. But to enjoy this office, it was neceſſary, as the ſtatutes direct, that he ſhould be promoted to a degree. To obtain this privilege the heads of the univerſity applied to their chancellor the duke of Somerſet, who procured the royal mandate to confer upon him the degree of maſter of arts. He was then elected Lucaſian profeſſor of mathematics in November 1711. His inauguration ſpeech was compoſed in claſſical Latin, and in the ſtyle of Cicero, with whoſe works he had been much converſant. He now devoted his whole time to his lectures, and the inſtruction of his pupils. When George II. in 1728, viſited the Univerſity of Cambridge, he expreſſed a deſire to ſee Profeſſor Saunderſon. In compliance with this deſire, he waited upon his majeſty in the ſenate-houſe, and was there, by the king's command, created doctor of laws. He was admitted a member of the Royal Society in 1736.

Saunderſon was naturally of a vigorous conſtitution; but having confined himſelf to a ſedentary life, he at length became ſcorbutic. For ſeveral years he felt a numbneſs in his limbs, which, in the ſpring of 1739, brought on a mortification in his foot; and, unfortunately, his blood was ſo vitiated by the ſcurvy, that aſſiſtance from medicine was not to be expected. When he was informed that his death was near, he remained for a little ſpace calm and ſilent; but he ſoon recovered his former vivacity, and converſed with his uſual eaſe. He died on the 19th of April 1739, in the 57th year of his age, and was buried at his own requeſt in the chancel at Boxworth.

He married the daughter of the reverend Mr Dickens, rector of Boxworth, in Cambridgeſhire, and by her had a ſon and daughter.

Dr Saunderſon was rather to be admired as a man of wonderful genius and aſſiduity, than to be loved for amiable qualities. He ſpoke his ſentiments freely of characters, and praiſed or condemned his friends as well as his enemies without reſerve. This has been aſcribed by ſome to a love of defamation; but perhaps with more propriety it has been attributed by others to an inflexible love of truth, which urged him upon all occaſions to ſpeak the ſentiments of his mind without diſguiſe, and without conſidering whether this conduct would pleaſe or give offence. His ſentiments were ſuppoſed unfavourable to revealed religion. It is ſaid, that he alleged he could not know God, becauſe he was blind, and could not ſee his works; and that, upon this, Dr Holmes replied, "Lay your hand upon yourſelf, and the organization which you will feel in your own body will diſſipate ſo groſs an error." On the other hand, we are informed, that he had deſired the ſacrament to be given him on the evening before his death. He was, however, ſeized with a delirium, which rendered this impoſſible,

He wrote a ſyſtem of algebra, which was publiſhed in 2 volumes 4to, at London, after his death in the year 1740, at the expence of the Univerſity of Cambrige.

Dr Saunderſon invented for his own uſe a Palpable Arithmetic; that is, a method of performing operations in arithmetic ſolely by the ſenſe of touch. It conſiſted of a table raiſed upon a ſmall frame, ſo that he could apply his hands with equal eaſe above and below. On this table were drawn a great number of parallel lines which were croſſed by others at right angles; the edges of the table were divided by notches half an inch diſtant from one another, and between each notch there were five parallels; ſo that every ſquare inch was divided into a hundred little ſquares. At each angle of the ſquares, where the parallels interſected one another, a hole was made quite through the table. In each hole he placed two pins, a big and a ſmall one. It was by the various arrangements of the pins that Saunderſon performed his operations. A deſcription of this method of making calculations by his table is given under the article BLIND, n° 38, though it is there by miſtake ſaid that it was not of his own invention. Saunderſon || Savona.

His ſenſe of touch was ſo perfect, that he could diſcover with the greateſt exactneſs the ſlighteſt inequality of ſurface, and could diſtinguiſh in the moſt finiſhed works the ſmalleſt overſight in the poliſh. In the cabinet of medals at Cambridge he could ſingle out the Roman medals with the utmoſt correctneſs; he could alſo perceive the ſlighteſt variation in the atmoſphere. One day, while ſome gentlemen were making obſervations on the ſun, he took notice of every little cloud that paſſed over the ſun which could interrupt their labours. When any object paſſed before his face, even though at ſome diſtance, he diſcovered it, and could gueſs its ſize with conſiderable accuracy. When he walked, he knew when he paſſed by a tree, a wall, or a houſe. He made theſe diſtinctions from the different ways his face was affected by the motion of the air.

His muſical ear was remarkably acute; he could diſtinguiſh accurately to the fifth of a note. In his youth he had been a performer on the flute; and he had made ſuch proficiency, that if he had cultivated his talents in this way, he would probably have been as eminent in muſic as he was in mathematics. He recognized not only his friends, but even thoſe with whom he was ſlightly acquainted, by the tone of their voice; and he could judge with wonderful exactneſs of the ſize of any apartment into which he was conducted.

SAVONA, a large, handſome, populous, and ſtrong town of Italy, in the territory of Genoa, with two caſtles, and a biſhop's ſee. It contains ſeveral handſome churches and well-built ſtructures. It was taken by the king of Sardinia in 1746, at which time it had a capacious harbour; but the people of Genoa, being afraid that it would hurt their own trade, choaked it up. It is ſeated on the Mediterranean ſea, in a well-cultivated country, abounding in ſilk and all kinds of good fruit. E. Long. 8. 14. N. Lat. 44. 21.

SAVONAROLA (Jerome), a famous Italian monk, was born at Ferrara in 1452, and deſcended of a noble family. At the age of 22 he aſſumed the habit of a Dominican friar, without the knowledge of his parents, and diſtinguiſhed himſelf in that order by his piety and ability as a preacher. Florence was the theatre where he choſe to appear; there he preached, confeſſed, and wrote. He had addreſs enough to place himſelf at the head of the faction which oppoſed the family of the Medici. He explained the Apocalypſe, and there found a prophecy which foretold the deſtruction of his opponents. He predicted a renovation of the church, and declaimed with much ſeverity againſt the clergy and the court of Rome. Alexander VI. excommunicated him, and prohibited him from preaching. He derided the anathemas of the Pope: yet he forbore preach-

for

Savonarola for some time, and then resumed his employment with more applause than before. The Pope and the Medici family then thought of attacking him with his own weapons. Savonarola having posted up a thesis as a subject of disputation, a Franciscan, by their instigation, offered to prove it heretical. The Franciscan was seconded by his brother friars, and Savonarola by his; and thus the two orders were at open war with each other. To settle the dispute, and to convince their antagonists of the superior sanctity of Savonarola, one of the Dominicans offered to walk through a fire; and in order to prove his wickedness, a Franciscan agreed to the same experiment. The multitude, eager to witness so extraordinary a spectacle, urged both parties to come to a decision; and the magistrates were constrained to give their consent. Accordingly, Saturday the 7th of April 1498 was fixed for the trial. On that day the champions appeared; but when they saw one another in cold blood, and beheld the wood in flames, they were seized with fear, and were very anxious to escape by any subterfuge the imminent danger into which they had rashly thrown themselves. The Dominican pretended he could not enter the flames without the host in his hand. This the magistrates obstinately refused to allow; and the Dominican's fortitude was not put to the test. The Franciscans incited the multitude against their opponents, who accordingly assaulted their monastery, broke open the gates which were shut against them, and entered by force. Upon this, the magistrates thought it necessary to bring Savonarola to trial as an impostor. He was put to the torture, and examined; and the answers which he gave fully evinced that he was both a cheat and a fanatic. He boasted of having frequent conversations with God, and found his brother friars credulous enough to believe him. One of the Dominicans, who had shared in his sufferings, affirmed, that he saw the Holy Ghost in the shape of a dove, with feathers of gold and silver, twice in one day alight on the shoulder of Savonarola and peck his ear; he pretended also that he had violent combats with demons. John Francis Picus earl of Mirandula, who wrote his life, assures us, that the devils which infested the convent of the Dominicans trembled at the sight of friar Jerome, and that out of vexation they always suppressed some letters of his name in pronouncing it. He expelled them from all the cells of the monastery. When he went round the convent sprinkling holy water to defend the friars from the insults of the demons, it is said the evil spirits spread thick clouds before him to prevent his passage.—At length, the pope Alexander VI. sent the chief of the Dominicans, with bishop Romolino, to degrade him from holy orders, and to deliver him up to the secular judges with his two fanatical associates. They were condemned to be hanged and burned on the 23d May 1498. Savonarola submitted to the execution of the sentence with great firmness and devotion, and without uttering a word respecting his innocence or his guilt. He was 46 years of age. Immediately after his death, his Confession was published in his name. It contained many extravagancies, but nothing to deserve so severe and infamous a punishment. His adherents did not fail to attribute to him the power of working miracles; and so strong a veneration had they for their chief, that they preserved with pious care any parts of his body which they could snatch from the flames. The earl of Mirandula, the author of his life, has described him as an eminent saint. He gravely informs us, that his heart was found in a river; and that he had a piece of it in his possession, which had been very useful in curing diseases, and ejecting demons. He remarks, that many of his persecutors came to a miserable end. Savonarola has also been defended by Father Quetif, Bzovius, Baron, and other religious Dominicans.

Savory || Savoy.

He wrote a prodigious number of books in favour of religion. He has left, 1. Sermons in Italian; 2. A Treatise entitled, *Triumphus crucis*; 3. *Eruditorum Confessorum*, and several others. His works have been published at Leyden in 6 volumes 12mo.

SAVORY, in botany. See SATUREIA.

SAVOUR. See TASTE.

SAVOY, a duchy lying between France and Italy, and which takes its name from the Latin Sabaadia, altered afterwards to Saboia, and Sabojia.

This country was anciently inhabited by the Celtes, whose descendants therein were subdivided into the Allobroges, Nantuates, Veragri, Seduni, Salassi, Centrones, Garocelli, and some others of inferior note.—Of all these the Allobroges were the most considerable. The reduction of these tribes, in which Julius Cæsar had made a great progress, was completed under Augustus. Afterwards this country shared the fate of the rest of the western empire, and was over-run by the northern barbarians. The Burgundians held it a considerable time; but when or how it first became a distinct earldom under the present family, is what historians are not agreed about: thus much, however, is certain, that Amadæus I. who lived in the 12th century, was count of it. In 1416, Amadæus VIII, was created by the emperor Sigismund duke of Savoy; and Victor Amadæus first took the title of king of Sicily, and afterwards of Sardinia. See SARDINIA. Savoy was lately conquered by the French, and added to the republic as the eightieth department. As this arrangement, though decreed by the convention to last for ever, may probably be of short duration, we shall write of the duchy as of an independent state. Savoy, then, is bounded to the south by France and Piedmont; to the north by the lake of Geneva, which separates it from Switzerland; to the west by France; and to the east by Piedmont, the Milanese, and Switzerland; its greatest length being about eighty-eight miles, and breadth about seventy-six.

As it lies among the Alps, it is full of lofty mountains, which in general are very barren: many of the highest of them are perpetually covered with ice and snow. The summit of those called *Montagnes Maudites*, "the cursed mountains," are said to be more than two English miles in perpendicular height above the level of the lake of Geneva, and the level itself is much higher than the Mediterranean. In some few of the valleys there is corn-land and pasture, and a good breed of cattle and mules; and along the lake of Geneva, and in two or three other places, a tolerable wine is produced. Mount Senis or Cenis, between Savoy and Piedmont, over which the highway from Geneva to Turin lies, is as high, if not higher, than the *Montagnes Maudites*; but of all the mountains of the Alps, the highest is mount Rochmelon, in Piedmont, between Fertiere and Novalese. The roads over these mountains are very tedious, disagreeable, and dangerous, especially as huge masses of snow, called by the Italians *ava'anches*,

Savoy. *avalanches*, and fragments of rocks, frequently roll down into them from the impending precipices. The way of travelling is either in fledges, chairs, or on the backs of mules: in ſome places the path on the brink of the precipices is ſo narrow, that there is but juſt room for a ſingle perſon to paſs. It begins to ſnow on theſe mountains commonly about the beginning of October. In ſummer, in the months of July, Auguſt, and September, many of them yield very fine graſs, with a great variety of flowers and herbs; and others box-wood, walnuts, cheſnuts, and pines. The height and different combinations of theſe mountains, their towering ſummits riſing above one another, and covered with ſnow the many cataracts or falls of water, the noiſe and rapidity of the river Arc, the froth and green tincture of its water, the echoes of its numerous ſtreams tumbling from cliff to cliff, form altogether a very romantic ſcene. Theſe mountainous tracts, notwithſtanding their height, are not altogether free from thunder in ſummer, and are alſo much expoſed to thick clouds, which ſometimes ſettle unexpectedly on them, and continue ſeveral days. There are ſome wolves among the thickets; and they abound with hares, rupicapras or chamois, and marmottes. In the lower parts of Savoy, there are alſo bears, wild boars, deer, and rabbits; and among the deſolate mountains are found great quantities of rock-cryſtal. In the glacieres or ice-valleys, between the high mountains, the air is extremely cold, even in the months of July and Auguſt. The ſurface of theſe ice-valleys looks like a ſea or lake, which, after being agitated by fierce and contrary winds, has been frozen all at once, interſperſed with hideous cracks and chaſms. The noiſe of theſe cracks, when firſt made by the heat of the noon day ſun, and reverberated by the ſurrounding rocks and mountains, is aſtoniſhing. The height of the impending mountains is ſuch, that the ſun's rays ſeldom reach the ice-valleys, except a few hours in the middle of ſummer. The avalanches or ſnow-balls, which the leaſt concuſſion of the air will occaſion, tumble down the mountains with amazing rapidity, continually increaſing, and carrying all before them. People have been taken out alive, after being buried ſeveral days under them. The mountainous nature of this duchy renders the plough an uſeleſs inſtrument of agriculture. The peaſants break up the hungry ſoil with the pickaxe and ſpade, and to improve it carry up mould and dung in baſkets. For the purpoſe of preſerving it from drought in the ſpring and ſummer, they cut ſmall reſervoirs above it, the water of which may be let out at will; and to prevent the earth from giving way, break the declivity of the mountains by building walls on the ſide for its ſupport, which frequently aſſume the appearance of ancient fortification, and are a very pleaſing deception to travellers. The Savoyards carry their better ſort of cheeſe into Piedmont, as the flavour is much eſteemed there; but they gain more by their ſkins of bears, chamois, and bouquetins (a ſpecies of the wild goat), or by the ſale of growſe and pheaſants, which they carry in great numbers to Turin.

The chief rivers are the Rhone, which, on the ſide of Geneva, ſeparates Savoy from France; the Arve, which has ſome particles of gold in its ſands; the Iſere, the Seran, the Siers, and the Arc. There are alſo a great many lakes in this country, which yield plenty of fiſh, but none of them are very large, together with medicinal and reciprocating ſprings and hot baths. Savoy.

The language of the common people is a corrupt French; but the better ſort, and thoſe who live in the great cities, ſpeak as good French as they do in Paris itſelf.

In their temper, however, and diſpoſition, the Savoyards reſemble the Germans more than the French, retaining ſtill much of the old German honeſty and ſimplicity of manners, which no doubt is partly owing to the poverty and barrenneſs of the country. To this alſo, joined to their longevity and the fruitfulneſs of their women, which are the effects of their cheerful diſpoſition, healthy air, activity, temperance, and ſobriety, it is owing that great numbers of them are obliged to go abroad in queſt of a livelihood, which they earn, thoſe at leaſt who have no trades, by ſhowing marmottes, cleaning ſhoes, ſweeping chimneys, and the like. It is ſaid, that there are generally about 18,000 of them, young and old, about Paris. In ſummer they lie in the ſtreets, and in winter, forty, fifty, or ſixty of them lodge together in a room: they are ſo honeſt that they may be truſted to any amount. The children are often carried abroad in baſkets before they are able to walk. In many villages of Savoy there is hardly a man to be ſeen throughout the year, excepting a month or two. Thoſe that have families generally ſet out and return about the ſame ſeaſon, when their wives commonly lie in, and they never fail to bring home ſome part of their ſmall earnings. Some of them are ſuch conſummate maſters of economy, that they ſet up ſhops and make fortunes, and others return home with a competency for the reſt of their days. An old man is often diſpatched with letters, little preſents, and ſome money, from the younger ſort, to their parents and relations, and brings back with him freſh colonies, letters, meſſages, and news. The cultivation of their grounds, and the reaping and gathering in of the harveſt and vintage, are generally left to the women and children; but all this is to be underſtood of the mountainous parts of Savoy. Great numbers of the mountaineers of both ſexes are ſaid to be lame and deformed; and they are much ſubject to a kind of wens, which grow about their throats, and very much diſfigure them, eſpecially the women; but that is the only inconvenience they feel from them.

The nobility of Savoy, and the other dominions of the king of Sardinia, labour under great hardſhips and reſtrictions, unheard of in other countries, which we have not room here to particularize. A minute account of them will be found in Mr Keyſler's Travels. In ſhort, the king has left neither liberty, power nor much property, to any but himſelf and the clergy, whoſe overgrown wealth he has alſo greatly curtailed.

No other religion is profeſſed or tolerated in Savoy but that of the church of Rome. The decrees, however, of the council of Trent are not admitted; nor are the churches aſylums for malefactors.

This duchy is divided into thoſe of Chablais, Genevois, and Savoy Proper, the counties of Tarantaiſe and Maurienne, and the barony of Faucigny.

SAURIN (James), a celebrated preacher, was born at Niſmes in 1677, and was the ſon of a proteſtant lawyer of conſiderable eminence. He applied to his ſtudies with

Saurin. with great ſucceſs; but at length being captivated with a military life, he relinquiſhed them for the profeſſion of arms. In 1694 he made a campaign as a cadet in lord Galloway's company, and ſoon afterwards obtained a pair of colours in the regiment of colonel Renault which ſerved in Piedmont. But the duke of Savoy having made peace with France, he returned to Geneva, and reſumed the ſtudy of philoſophy and theology under Turretin and other profeſſors. In 1700 he viſited Holland, then went to England, where he remained for ſeveral years, and married. In 1705 he returned to the Hague, where he fixed his reſidence, and preached with the moſt unbounded applauſe. To an exterior appearance highly prepoſſeſſing, he added a ſtrong harmonious voice. The ſublime prayer which he recited before his ſermon was uttered in a manner highly affecting. Nor was the attention excited by the prayer diſſipated by the ſermon: all who heard it were charmed; and thoſe who came with an intention to criticiſe, were carried along with the preacher and forgot their deſign. Saurin had, however, one fault in his delivery; he did not manage his voice with ſufficient ſkill. He exhauſted himſelf ſo much in his prayer and the beginning of his ſermon, that his voice grew feeble towards the end of the ſervice. His ſermons, eſpecially thoſe publiſhed during his life, are diſtinguiſhed for juſtneſs of thought, force of reaſoning, and an eloquent unaffected ſtyle.

The firſt time that the celebrated Abaddie heard him preach, he exclaimed, "Is it an angel or a man who ſpeaks?" Saurin died on the 30th of December, 1730, aged 53 years.

He wrote, 1. Sermons, which were publiſhed in 12 vols 8vo and 12mo; ſome of which diſplay great genius and eloquence, and others are compoſed with negligence. One may obſerve in them the imprecations and the averſion which the Calviniſts of that age were wont to utter againſt the Roman Catholics. Saurin was, notwithſtanding, a lover of toleration: and his ſentiments on this ſubject gave great offence to ſome of his fanatical brethren, who attempted to obſcure his merit, and embitter his life. They found fault with him becauſe he did not call the pope *Antichriſt*, and the Romiſh church *the whore of Babylon*. But theſe prophetic metaphors, however applicable they may be, were certainly not intended by the benevolent religion of Jeſus to be bandied about as terms of reproach; which would teach thoſe to rail who uſe them, and irritate, without convincing, thoſe to whom they were applied.

Saurin, therefore, while he perhaps interpreted theſe metaphors in the ſame way with his oppoſers, diſcovered more of the moderation of the Chriſtian ſpirit. Five volumes of his ſermons were publiſhed in his life, the reſt have been added ſince his deceaſe.

2. Diſcourſes Hiſtorical, Critical, and Moral, on the moſt memorable Events of the Old and New Teſtament. This is his greateſt and moſt valuable work. It was printed firſt in two volumes folio. As it was left unfiniſhed, Beauſobre and Roques undertook a continuation of it, and increaſed it to four volumes. It is full of learning: it is indeed a collection of the opinions of the beſt authors, both Chriſtian and Heathen; of the philoſophers, hiſtorians, and critics, in every ſubject which the author examines. 3. The State of Chriſtianity in France, 1725, 8vo. In this book he diſcuſſes many important points of controverſy, and calls in queſtion the truth of the miracle ſaid to be performed on La Foſſe at Paris. 4. An Abridgment of Chriſtian Theology and Morality, in the form of a Catechiſm, 1722, 8vo. He afterwards publiſhed an abridgment of this work. Saurin.

A Diſſertation which he publiſhed on the Expediency of ſometimes diſguiſing the Truth, raiſed a multitude of enemies againſt him. In this diſcourſe his plan was, to ſtate the arguments of thoſe who affirm that, in certain caſes it is lawful to diſguiſe truth, and the anſwers of thoſe who maintain the contrary. He does not determine the queſtion, but ſeems, however, to incline to the firſt opinion. He was immediately attacked by ſeveral adverſaries, and a long controvery enſued; but his doctrines and opinions were at length publicly approved of by the ſynods of Campen and of the Hague.

The ſubject of this controverſy has long been agitated, and men of equally good principles have ſupported oppoſite ſides. It would certainly be a dangerous maxim that falſhood can ever be lawful. There may, indeed, be particular caſes, when the motives to it are of ſuch a nature as to diminiſh its criminality in a high degree; but to leſſen its guilt is a very different thing from juſtifying it by the laws of morality.

Saurin (Joſeph), a geometrician of the academy of Sciences at Paris, was born at Courtouſon in the principality of Orange, in 1659. His father, who was a miniſter at Grenoble, was his firſt preceptor. He made rapid progreſs in his ſtudies, and was admitted miniſter of Eure in Dauphiny when very young: but having made uſe of ſome violent expreſſions in one of his ſermons, he was obliged to quit France in 1683. He retired to Geneva, and thence to Berne, where he obtained a conſiderable living. He was ſcarcely ſettled in his new habitation, when ſome theologians raiſed a perſecution againſt him. Saurin, hating controverſy, and diſguſted with Switzerland, where his talents were entirely concealed, repaired to Holland. He returned ſoon after to France, and ſurrendered himſelf into the hands of Boſſuet biſhop of Meaux, who obliged him to make a recantation of his errors. This event took place in 1690. His enemies, however, ſuſpected his ſincerity in the abjuration which he had made. It was a general opinion, that the deſire of cultivating ſcience in the capital of France had a greater effect in producing this change than religion. Saurin, however, ſpeaks of the reformers with great aſperity, and condemns them for going too far. "Deceived in my opinions concerning the rigid ſyſtem of Calvin, I no longer regarded that reformer in any other light but as one of thoſe extravagant geniuſes who are carried beyond the bounds of truth. Such appeared to me in general the founders of the reformation; and that juſt idea which I have now obtained of their character has enabled me to ſhake off a load of prejudices. I ſaw in moſt of the articles which have ſeparated them from us, ſuch as the invocation of ſaints, the worſhip of images, the diſtinction of meats, &c. that they had much exaggerated the inevitable abuſes of the people, and imputed theſe to the Romiſh church, as if ſanctioned by its doctrines. Beſides, that they have miſrepreſented thoſe doctrines which were not connected with any abuſe. One thing which ſurpriſed me much when my eyes began to open, was the falſe idea, though in appearance

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Saurin ‖ Sauvageſia.

full of reſpect, for the word of God, which the reformers entertained of the perfection and perſpicuity of the Holy Scriptures, and the manifeſt miſinterpretation of paſſages which they bring to ſupport that idea (for that miſinterpretation is a point which can be proved). Two or three articles ſtill raiſed ſome objections in my mind againſt the Romiſh church; to wit, Tranſubſtantiation, the adoration of the ſacrament, and the infallibility of the church. The adoration of the ſacrament I conſidered as idolatry, and, on that account, removed from her communion. But ſoon after, the Expoſition of the biſhop of Meaux, a work which can never be ſufficiently admired, and his Treatiſe concerning changes, reverſed all my opinions, and rendered me an enemy to the Reformation." It is ſaid alſo, that Saurin appeaſed his conſcience by reading Poiret's *Cogitationes rationales*. This book is written with a view to vindicate the church of Rome from the charge of idolatry.

If it was the love of diſtinction that induced Saurin to return to the Romiſh church, he was not diſappointed; for he there met with protection and ſupport. He was favourably received by Louis XIV. obtained a penſion from him, and was treated by the Academy of Sciences with the moſt flattering reſpect. At that time (1717), geometry formed his principal occupation. He adorned the *Journal des Savans* with many excellent treatiſes; and he added to the memoirs of the Academy many intereſting papers. Theſe are the only works which he has left behind him. He died at Paris on the 29th December 1737, in his 78th year, of a fever. He married a wife of the family of Crouſas in Switzerland, who bore him a ſon, Bernard Joſeph, diſtinguiſhed as a writer for the theatre.

Saurin was of a bold and impetuous ſpirit. He had that lofty deportment which is generally miſtaken for pride. His philoſophy was auſtere; his opinions of men were not very favourable; and he often delivered them in their preſence: this created him many enemies. His memory was attacked after his deceaſe. A letter was printed in the *Mercure Suiſſe*, ſaid to be written by Saurin from Paris, in which he acknowledges that he had committed ſeveral crimes which deſerved death. Some Calviniſt miniſters publiſhed in 1757 two or three pamphlets to prove the authenticity of that letter; but Voltaire made diligent enquiry not only at the place where Saurin had been diſcharging the ſacerdotal office, but at the Deans of the clergy of that department. They all exclaimed againſt an imputation ſo opprobrious. It muſt not, however, be concealed, that Voltaire, in the defence which he has publiſhed in his general hiſtory of Saurin's conduct, leaves ſome unfavourable impreſſions upon the reader's mind. He inſinuates, that Saurin ſacrificed his religion to his intereſt; that he played upon Boſſuet, who believed he had converted a clergyman; when he had only given a little fortune to a philoſopher.

SAURURUS, in botany: A genus of the tetragynia order, belonging to the heptandria claſs of plants; and in the natural method ranking under the ſecond order, *Piperitæ*. The calyx is a catkin, with uniflorous ſcales: there is no corolla; there are four germina, and four monoſpermous berries.

SAUVAGESIA, in botany: A genus of the monogynia order, belonging to the pentandria claſs of plants; and in the natural method ranking with thoſe of which the order is doubtful. The corolla is pentapetalous and fringed; the calyx pentaphyllous; the nectarium the ſame, having its leaves placed alternately with the petals; the capſule unilocular.

Sauveur ‖ Saxe.

SAUVEUR (Joſeph), an eminent French mathematician, born at La Fleche in 1658. He was abſolutely dumb until he was ſeven years of age; and even then his organs of ſpeech did not diſengage themſelves ſo freely, but that he was ever after obliged to ſpeak with great deliberation. Mathematics were the only ſtudies he had any reliſh for, and theſe he cultivated with extraordinary ſucceſs; ſo that he commenced teacher at 20 years of age, and was ſo ſoon in vogue, that he had prince Eugene for his ſcholar. He was made mathematical profeſſor in the royal college in 1686; and ten years after was admitted a member of the Academy of Sciences. He died in 1716; and his writings, which conſiſt rather of detached papers than of connected treatiſes, are all inſerted in the Memoirs of the Academy of Sciences. He was twice married; and by the laſt wife had a ſon, who, like himſelf, was dumb for the firſt ſeven years of his life.

SAW, an inſtrument which ſerves to cut into pieces ſeveral ſolid matters; as wood, ſtone, ivory, &c.

The beſt ſaws are of tempered ſteel ground bright and ſmooth: thoſe of iron are only hammer-hardened: hence the firſt, beſides their being ſtiffer, are likewiſe found ſmoother than the laſt. They are known to be well hammered by the ſtiff bending of the blade; and to be well and evenly ground, by their bending equally in a bow.

Saw-fiſh. See PRISTIS.

SAXE (Maurice count of), was born the 13th October 1696. He was the natural ſon of Frederic Auguſtus II. elector of Saxony, and king of Poland, and of the counteſs of Konigſmarc, a Swediſh lady, celebrated both for her wit and beauty. He was educated along with Frederic Auguſtus the electoral prince, afterwards king of Poland. His infancy announced the future warrior. Nothing could prevail on him to apply to his ſtudies but the promiſe of being allowed, after he had finiſhed his taſk, to mount on horſe-back or exerciſe himſelf with arms.

He ſerved his firſt campaign in the army commanded by prince Eugene and the duke of Marlborough, when only twelve years old. He ſignalized himſelf at the ſieges of Tournay and Mons, and particularly at the battle of Malplaquet. In the evening of that memorable day, he was heard to ſay, "I'm content with my day's work." During the campaign of 1710, prince Eugene and the duke of Marlborough made many public encomiums on his merit. Next year the young count accompanied the king of Poland to the ſiege of Stralſund, the ſtrongeſt place in Pomerania, and diſplayed the greateſt intrepidity. He ſwam acroſs the river in ſight of the enemy, with a piſtol in his hand. His valour ſhone no leſs conſpicuous on the bloody day of Gadelbuſch, where he commanded a regiment of cavalry. He had a horſe killed under him, after he had three times rallied his regiment, and led them on to the charge.

Soon after that campaign, his mother prevailed on him to marry the counteſs of Lubin, a lady both rich and beautiful. This union laſted but a ſhort time. In 1721, the count procured a diſſolution of the marriage;

Saxe. a ſtep of which he afterwards repented. The counteſs left him with regret; but this did not prevent her from marrying ſoon after. The count of Saxe was too fond of pleaſure and variety to ſubmit to the duties which marriage impoſes. In the midſt, however, of the pleaſures in which he ſometimes indulged, he never loſt ſight of his profeſſion. He carried along with him wherever he went a library of military books; and even when he ſeemed moſt taken up with his pleaſures, he never failed to ſpend an hour or two in private ſtudy.

In 1717 he went to Hungary, where the emperor had an army of 15,000 men under the command of prince Eugene. Young count Saxe was preſent at the ſiege of Belgrade, and at a battle which the prince gained over the Turks. On his return to Poland in 1718, he was made a knight of the golden eagle.

The wars in Europe being concluded by the treaties of Utrecht and Paſſarowitz, count Saxe went to France. He had always profeſſed a partiality for that country. French, indeed, was the only foreign language which during his infancy he was willing to learn. He ſpent his whole time during the peace in ſtudying mathematics, fortification, and mechanics, ſciences which exactly ſuited his genius. The mode of exerciſing troops had ſtruck his attention when very young. At 16 he invented a new exerciſe, which was taught in Saxony with the greateſt ſucceſs. Having obtained a regiment in France in 1722, he formed it himſelf according to his new plan. From that moment the *Chevalier Follar*, an excellent judge of military talents, predicted that he would be a great man.

In 1726 the States of Courland choſe him for their ſovereign. But both Poland and Ruſſia roſe in arms to oppoſe him. The Czarina wiſhed to beſtow the duchy on Menzikoff, a happy adventurer, who from a paſtry-cook's boy became a general and a prince. Menzikoff ſent 800 Ruſſians to Milan, where they beſieged the new-choſen duke in his palace. Count Saxe, who had only 60 men, defended himſelf with aſtoniſhing intrepidity. The ſiege was raiſed, and the Ruſſians obliged to retreat. Soon after he retired to Uſmaiz, and prepared to defend his people againſt the two hoſtile nations. Here he remained with only 300 men, till the Ruſſian general approached at the head of 4000 to force his retreat. That general invited the count to a conference, during which he intended to ſurpriſe him, and take him priſoner. The count, informed of the plot, reproached him for his baſeneſs, and broke up the conference. About this time he wrote to France for men and money. Mademoiſelle le Couvreur, a famous actreſs, pawned her jewels and plate, and ſent him the ſum of 40,000 livres. This actreſs had formed his mind for the fine arts. She had made him read the greater part of the French poets, and given him a taſte for the theatre, which he retained even in the camp. The count, unable to defend himſelf againſt Ruſſia and Poland, was obliged in the year 1729 to leave his new dominions, and retire into France. It is ſaid that Anne Iwanowa, ducheſs dowager of Courland, and ſecond daughter of the czar Iwan Alexiowitz, had given him hopes of marriage, and abandoned him at that time becauſe ſhe deſpaired of fixing his wavering paſſion.—This inconſtancy loſt him not only Courland, but the throne of Ruſſia itſelf, which that Princeſs afterwards filled.

Count Saxe, thus ſtript of his territories, devoted himſelf for ſome time to the ſtudy of mathematics. He compoſed alſo, in 13 nights, and during the intervals of an ague, his *Reveries*, which he corrected afterwards. This book is written in an incorrect but forcible ſtyle; it is full of remarks both new and profound, and is equally uſeful to the ſoldier and the general. Saxe.

The death of the king of Poland his father, in 1733, kindled a new war in Europe. His brother, the elector of Saxony, offered him the command of all his forces, but he preferred the French ſervice, and repaired to the marechal of Berwick's army, which was encamped on the Rhine. "Count," ſaid that general, who was preparing to attack the enemy's entrenchments at Etlinghen, "I was going to ſend for 3000 men, but your arrival is of more value than theirs." When the attack began, the count, at the head of a regiment of grenadiers, forced the enemy's lines, and by his bravery decided the victory. He behaved at the ſiege of Philipſburgh with no leſs intrepidity. For theſe ſervices he was, in 1734, rewarded with the rank of lieutenant-general. Peace was concluded in 1736; but the death of Charles VI. emperor of Germany kindled a new war almoſt immediately.

Prague was beſieged by the count of Saxe in 1741, near the end of November, and taken the ſame month by aſſault. The conqueſt of Egra followed that of Prague. It was taken a few days after the trenches were opened. This ſucceſs gave ſo much joy to the Emperor Charles VII. that he wrote a congratulatory letter to the conqueror with his own hands.

In 1744 he was made marechal of France, and commanded a part of the French army in Flanders. During that campaign he diſplayed the greateſt military conduct. Though the enemy was ſuperior in number, he obſerved their motions ſo ſkilfully that they could do nothing.

In January 1745, an alliance was concluded at Warſovia between the queen of Hungary, the king of England, and the States of Holland. The ambaſſador of the States General, meeting marechal Saxe one day at Verſailles, aſked his opinion of that treaty. "I think (ſays he), that if the king my maſter would give me an unlimited commiſſion, I would read the original at the Hague before the end of the year." This anſwer was not a bravado; the marechal was capable of performing it.

He went ſoon after, though exceedingly ill, to take the command of the French army in the Low Countries. A gentleman, ſeeing the feeble condition in which he left Paris, aſked him how he could in that ſituation undertake ſo great an enterpriſe? "The queſtion (replied he) is not about living, but ſetting out."—Soon after the opening of the campaign, the battle of Fontenoy was fought. Marechal Saxe was at the point of death, yet he cauſed himſelf to be put into a litter, and carried round all the poſts. During the action he mounted on horſeback, though he was ſo very weak that his attendants dreaded every moment to ſee him expire. The victory of Fontenoy, owing entirely to his vigilance and capacity, was followed by the reduction of Tournay, Bruges, Ghent, Oudenarde, Oſtend, Ath, and Bruſſels: this laſt city was taken on the 28th February 1746; and very ſoon after the king ſent to the marechal a letter of naturalization conceived in the moſt flattering

Saxe. flattering terms. The ſucceeding campaigns gained him additional honours. After the victory of Raucoux, which he gained on the 11th October 1746, the king of France made him a preſent of ſix pieces of cannon. He was, on the 12th of January of the following year, created marechal of all the French armies, and, in 1748, commander-general of all thoſe parts of the Netherlands which were lately conquered.

Holland now began to tremble for her ſafety, Maeſtricht and Bergen-op-Zoom had already fallen, and nothing but misfortunes ſeemed to attend the further proſecution of the war. The States General, therefore, offered terms of peace, which were accepted, and a treaty concluded on the 18th October 1748.

Marechal Saxe retired to Chambord, a country ſeat which the king of France had given him. Some time after he went to Berlin, where the king of Pruſſia received him as Alexander would have received Cæſar.—On his return to France, he ſpent his time among men of learning, artiſts, and philoſophers. He died of a fever, on the 30th November 1750, at the age of 54.

Some days before his death, talking to M. Senac his phyſician about his life, "It has been (ſays he) an excellent dream." He was remarkably careful of the lives of his men. One day a general officer was pointing out to him a poſt which would have been of great uſe. "It will only coſt you (ſays he) a dozen grenadiers." "That would do very well," replied the marechal, "were it only a dozen lieutenant-generals."

It was impoſſible for marechal Saxe, the natural brother of the king of Poland, elected ſovereign of Courland, and poſſeſſed of a vigorous and reſtleſs imagination, to be deſtitute of ambition. He conſtantly entertained the notion that he would be a king. After loſing the crown of Ruſſia by his inconſtancy in love, he formed, it is ſaid, the project of aſſembling the Jews, and of being the ſovereign of a nation which for 1700 years had neither poſſeſſed chief nor country. When this chimerical idea could not be realized, he caſt his eyes upon the kingdom of Corſica. After failing in this project alſo, he was buſily employed in planning a ſettlement in ſome part of America, particularly Brazil, when death ſurpriſed him.

He had been educated and died in the Lutheran religion. "It is a pity (ſaid the queen of France, when ſhe heard of his death) that we cannot ſay a ſingle *De profundis (prayer for the dead)* for a man who has made us ſing ſo many *Te Deums*." All France lamented his death.

By his will, which is dated at Paris, March 1, 1748, he directed that his body ſhould be buried in quicklime: "that nothing (ſays he) may remain of me in this world but the remembrance of me among my friends." Theſe orders, however, were not complied with; for his body was embalmed, put into a leaden coffin, which was incloſed in another of copper, and this covered with one of wood, bound about with iron. His heart was put into a ſilver gilt box, and his entrails into another coffin. Louis XV. was at the charge of his funeral. By his order his corpſe was interred with great pomp and ſplendor in the Lutheran church of St Thomas, at Straſburgh, on the 8th of February 1751.

The marechal was a man of ordinary ſtature, of a robuſt conſtitution, and extraordinary ſtrength. To an aſpect, noble, warlike, and mild, he joined the excellent qualities of the heart. Affable in his manners, and diſpoſed to ſympathize with the unfortunate, his generoſity ſometimes carried him beyond the limits of his fortune. On his death-bed he reviewed the errors of his life with remorſe, and expreſſed much penitence. Saxifraga.

The beſt edition of his Reveries was printed at Paris 1757, in 2 vols 4to. It was compared with the greateſt attention with the original manuſcript in the king's library. It is accompanied with many deſigns exactly engraved, and a life of the author. The Life of marechal Saxe was written by M. d'Eſpagnac, 2 vols. 12mo. This hiſtory is written in the panegyrical ſtyle. The author is, however, impartial enough to remark, that in the three battles upon which the reputation of marechal Saxe is founded, he engaged in the moſt favourable circumſtances. "Never did a general (ſays he) ſtand in a more advantageous ſituation. Honoured with the confidence of the king, he was not reſtrained in any of his projects. He always commanded a numerous army: his ſoldiers were ſteady, and his officers poſſeſſed of great merit."

SAXIFRAGA, Saxifrage, in botany: A genus of the digynia order, belonging to the decandria claſs of plants; and in the natural method ranking under the 13th order, *Succulentæ*. The calyx is quinquepartite; the corolla pentapetalous; the capſule biroſtrated, unilocular, and polyſpermous.

There are 38 ſpecies; of which the moſt remarkable are, 1. The granulata, or white ſaxifrage, which grows naturally in the meadows in many parts of England. The roots of this plant are like grains of corn, of a reddiſh colour without; from which ariſe kidney-ſhaped hairy leaves, ſtanding upon pretty long footſtalks.—The ſtalks are thick, a foot high, hairy, and furrowed: theſe branch out from the bottom, and have a few ſmall leaves like thoſe below, which ſit cloſe to the ſtalk: the flowers terminate the ſtalk, growing in ſmall cluſters; they have five white petals, incloſing ten ſtamina and the two ſtyles. There is a variety of this with double flowers, which is very ornamental. 2. The pyramidata, with a pyramidal ſtalk, grows naturally on the mountains of Italy. The leaves are tongue-ſhaped, gathered into heads, rounded at their points, and have cartilaginous and ſawed borders. The ſtalk riſes two feet and a half high, branching out near the ground, forming a natural pyramid to the top. The flowers have five white wedge-ſhaped petals, and ten ſtamina, placed circularly the length of the tube, terminated by roundiſh purple ſummits. When theſe plants are ſtrong, they produce very large pyramids of flowers, which make a fine appearance. 3. The punctata, commonly called *London pride*, or *none-ſo-pretty*, grows naturally on the Alps, and alſo in great plenty on a mountain of Ireland called *Mangerton*, in the county of Kerry in that iſland. The roots of this are perennial; the leaves are oblong, oval, and placed circularly at bottom. They have broad, flat, furrowed footſtalks, and are deeply crenated at their edges, which are white. The ſtalk riſes a foot high, is of a purple colour, ſtiff, ſlender, and hairy. It ſends out from the ſide on the upper part ſeveral ſhort footſtalks, which are terminated by white flowers ſpotted with red. 4. The oppoſitifolia, grows natural-

Saxo. Saxony.

ly on the Alps, Pyrenees, and Helvetian mountains: It is alſo found pretty plentifully growing upon Ingleborough hill in Yorkſhire, Snowdon in Wales, and ſome other places. It is a perennial plant, with ſtalks trailing upon the ground, and are ſeldom more than two inches long, garniſhed with ſmall oval leaves ſtanding oppoſite, which lie over one another like the ſcales of fiſh: they are of a brown-green colour, and have a reſemblance of heath. The flowers are produced at the end of the branches, of a deep blue; and thus make a pretty appearance during their continuance, which is great part of March and the beginning of April. All theſe ſpecies are eaſily propagated by offsets, or by parting their roots.

Saxo's Travels into Denmark.

SAXO GRAMMATICUS, deſcended from an illuſtrious Daniſh (A) family, was born about the middle of the 12th century. Stephens, in his edition of Saxo-Grammaticus, printed at Soroë, indubitably proves, that he muſt have been alive in 1156, but cannot aſcertain the exact place and time of his birth. See Stephens's *Prolegomena* to the Notes on Saxo-Grammaticus, p. 8, to 24; alſo Holberg, vol. i. p. 269.; and Mallet's North. Antiq. vol. i. p. 4. On account of his uncommon learning, Saxo was diſtinguiſhed by the name of *Grammaticus*. He was provoſt of the cathedral church of Roſkild, and warmly patronized by the learned and warlike Abſalon, the celebrated archbiſhop of Lunden, at whoſe inſtigation he wrote the Hiſtory of Denmark. His epitaph, a dry panegyric in bad Latin verſes, gives no account of the era of his death, which happened, according to Stephens, in 1204. His hiſtory, conſiſting of 16 books, begins from the earlieſt account of the Daniſh annals, and concludes with the year 1186. According to the opinion of an accurate writer, the firſt part, which relates to the origin of the Danes, and the reigns of the ancient kings, is full of fables; but the eight laſt books, and particularly thoſe which regard the events of his own times, deſerve the utmoſt credit. He wrote in Latin; the ſtyle, if we conſider the barbarous age in which he flouriſhed, is in general extremely elegant, but rather too poetical for hiſtory. Mallet, in his *Hiſtoire de Dannemarc*, vol. i. p. 182, ſays, "that Sperling, a writer of great erudition, has proved, in contradiction to the aſſertions of Stephens and others, that Saxo-Grammaticus was ſecretary to Abſalon; and that the Saxo provoſt of Roſkild was another perſon, and lived earlier."

Holberg.

SAXONY, the name of two circles of the German empire, an electorate, and a duchy of the ſame. The lower circle is bounded to the ſouth by the circle of Upper Saxony, and a part of that of the Upper Rhine; to the north, by the duchy of Sleſwick, belonging to the king of Denmark, and the Baltic; to the weſt, by the circle of Weſtphalia and the north ſea; and to the eaſt by the circle of Upper Saxony. The ſtates belonging to it are the dukes and princes of Magdeburg and Bremen, Zell, Gruben-hagen, Calenburg, Wolfenbuttle, Holberſtadt, Mecklenburg-Schwerin, Mecklenburg-Guſtro, Holſtein-Gluckſtadt, Holſtein-Gottorf, Hildeſheim, Saxe-Lawenburg; the archbiſhopric of Lubeck; the principalities of Schwerin, Ratzeburg, Blankenburg, Ranzau; the Imperial cities of Lubeck, Gotzlar, Muhlhauſen, Nordhauſen, Hamburg, and Bremen. The dukes of Bremen and Magdeburg are alternately directors and ſummoning princes; but, ever ſince the year 1682, the diets which uſed generally to be held at Brunſwick or Lunenburg have been diſcontinued. Towards the army of the empire, which, by a decree of the empire in 1681, was ſettled at 40,000 men, this circle was to furniſh 1322 horſemen and 2707 foot; and of the 300,000 florins granted to the imperial cheſt in 1707, its quota was 31,271 florins; both which aſſeſſments are the ſame with thoſe of Upper Saxony, Burgundy, Swabia, and Weſtphalia. This circle at preſent nominates only two aſſeſſors in the chamber-judicatory of the empire, of one of which the elector of Brunſwick-Lunenburg has the nomination, who muſt be a Lutheran, and is the ninth in rank. The inhabitants of this circle are almoſt all Lutherans. Saxony.

The circle of Upper Saxony is bounded by that of Franconia, the Upper Rhine, and Lower Saxony; and alſo by the Baltic ſea, Pruſſia, Poland, Sileſia, Luſatia, and Bohemia. It is of great extent, and contains the following ſtates, viz. the electors of Saxony and Brandenburg, Saxe-Weimar, Saxe-Eiſenach, Saxe Cobourg, Saxe-Gotha, Saxe-Altenburg, Saxe-Querfurt, the Hither and Farther Pomerania, Camin, Anhalt, Quidlenburg, Gernrode, Walkenried, Schwarzburg, Sonderſhauſen, Schwarzburg-Rudolſtadt, Mansfeld, Stolberg, Barby, the counts of Reuſſen, and the counts of Schonberg. No diets have been held in this circle ſince the year 1683. The elector of Saxony has always been the ſole ſummoning prince and director of it. Moſt of the inhabitants profeſs the Proteſtant religion. When the whole empire furniſhes 40,000 men, the quota of this circle is 1322 horſe and 2707 foot. Of the 300,000 florins granted by the empire in 1707, it contributed only 31,271 florins, 28 kruitzers, being rated no higher than thoſe of Weſtphalia, Lower Saxony, Swabia, and Burgundy, though it is much larger. Agreeable to a reſolution and regulation in 1654, this circle nominates now only two aſſeſſors of the chamber court.

The electorate conſiſts of the duchy of Saxony, the greateſt part of the margravate of Miſſen, a part of the Vogtland, and the northern half of the landgravate of Thuringia. The Luſatias alſo, and a part of the country of Henneberg, belong to it, but are no part of this circle. The ſoil of the electoral dominions lying in this circle is in general exceeding rich and fruitful, yielding corn, fruits, and pulſe in abundance, together with hops, flax, hemp, tobacco, aniſeed, wild ſaffron, woad; and in ſome places woad, wine, coals, porcelain clay, terra ſigillata, fullers earth, fine ſhiver, various ſorts of beautiful marble, ſerpentine ſtone, and almoſt all the different ſpecies of precious ſtones. Sulphur alſo, alum, vitriol, ſand, and free-ſtone, ſalt-ſprings, amber, turf, cinnabar, quickſilver, antimony, bismuth, arſenic, cobalt, and other minerals, are found in it. This country,

(A) Some authors have erroneouſly conjectured, from his name Saxo, that he was born in Saxony, but Saxe was no uncommon appellation among the ancient Danes. See Olaus Wormius *Monumenta Danica*, p. 186, and Stephens's *Prolegomena*, p. 10.

Saxony. country, beſides the above articles, contains likewiſe valuable mines of ſilver, copper, tin, lead, and iron; and abounds in many places with horned cattle, ſheep, horſes, and veniſon. The principal rivers by which it is watered are the Elbe, the Schwerze-Elſter, the Mulde, the Saale, the Unſtrut, the Weiſſe-Elſter, and the Pleiſe. Theſe rivers, as well as the lakes and rivulets, abound in fiſh; and in the White-Elſter are found beautiful pearls. This electorate is extremely well cultivated and inhabited, and is ſaid to include about 250 great and ſmall towns, upwards of 5000 villages, 196 royal manors, and near as many royal caſtles, beſides private eſtates, and commanderies. The provincial diets here conſiſt of three claſſes. The firſt is compoſed of the prelates, the counts, and lords, and the two univerſities of Leipſic and Wittenberg. To the ſecond belong the nobility in general, immediate or mediate, that is, ſuch as ſtand immediately under the fief-chancery or the aulic judicatories, and ſuch as are immediately under the juriſdiction of the amtman. The third claſs is formed of the towns in general. The general provincial diets are ordinarily held every ſix years; but there are others called *ſelection diets*, which are convened commonly every two years. We would here obſerve, that not only theſe diets, but thoſe in moſt of the other ſtates of Germany, are at preſent extremely inſignificant and unimportant, retaining little more than the ſhadow of their former power and privileges; for even the petty princes, though they depend upon their more potent neighbours, and muſt be careful not to give them any umbrage, are almoſt as abſolute in their reſpective territories as the grand ſeignior himſelf. As to religion, it was in this country that the reformation took its riſe in the 16th century, to which it hath ever ſince adhered, according to the doctrines of Luther*. The two late electors, when they embraced Popery in order to qualify themſelves to be elected kings of Poland, gave the moſt ſolemn aſſurances to their people, that they would inviolably maintain the eſtabliſhed religion and its profeſſors in the full and free enjoyment of all their eccleſiaſtical rights, privileges, and prerogatives whatſoever, in regard to churches, worſhip, ceremonies, uſages, univerſities, ſchools, benefices, incomes, profits, juriſdictions, and immunities. The electoral families ſtill continue Roman Catholics, though they have loſt the crown of Poland, for which they at firſt embraced Popery. With reſpect to eccleſiaſtical matters, the country is divided into pariſhes, and theſe again into ſpiritual inſpections and conſiſtories, all ſubordinate to the eccleſiaſtical council and upper conſiſtory of Dreſden, in which city and Leipſic the Calviniſts and Roman Catholics enjoy the free exerciſe of their religion. Learning flouriſhes in this electorate; in which, beſides the free ſchools and gymnaſia in moſt of the chief towns, are the two celebrated univerſities of Wittenburg and Leipzig, in the laſt of which are alſo ſocieties for the liberal arts and the German language, with booksellers and printers of the greateſt eminence. A great variety of manufactures are alſo carried on in this country. The principal are thoſe of fine and coarſe linen, thread, fine lace, paper, fine glaſſes and mirrors; porcelain, equal if not ſuperior to that of China†; iron, braſs, and ſteel wares; manufactures of gold and ſilver, cotton, wool, and ſilk; gloves, caps, hats, and peltry; in which, and the natural productions mentioned above, together with dyeing, an important foreign commerce is carried on. A great addition has been made ſince the year 1718 to the electoral territories, by the extinction of the collateral branches of Zeitz, Merſeburg, and Weiſſenfels, whoſe dominions devolved to the elder electoral branch, deſcended from the margraves of Meiſſen. The firſt of theſe, who was elector of Saxony, was Frederick the Warlike, about the beginning of the 15th century. Saxony.

This elector ſtyles himſelf duke of Saxony, Juliers, Cleve, and Berg, as alſo of Engern and Weſtphalia, arch-marſhal and elector of the Holy Roman empire, landgrave in Thuringia, margrave of Meiſſen, and of Upper and Lower Luſatia, burgrave of Magdeburg, princely count of Henneberg, count of La Mark, Ravenſberg, Barby, and Hanau, and lord of Ravenſtein. Among the electors he is reckoned the ſixth, as great-marſhal of the empire, of which he is alſo vicar, during an interregnum, in all places not ſubject to the vicariate of the count palatine of the Rhine. He is moreover ſole director of the circle; and in the vacancy of the ſee of Mentz claims the directorium at the diet of the empire. His matricular aſſeſſment, on account of the electorate, is 1984 florins, beſides what he pays for other diſtricts and territories. To the chamber-courts he contributes, each term, the ſum of 1545 rix-dollars, together with 83 rix-dollars and 62 kruitzers on account of the county of Mansfeld. In this electorate, ſubordinate to the privy-council, are various colleges for the departments of war, foreign affairs, the finances, fiefs, mines, police, and eccleſiaſtical affairs, together with high tribunals and courts of juſtice, to which appeals lie from the inferior. The revenues of this elector are as conſiderable as thoſe of any prince in the empire, if we except thoſe of the houſe of Auſtria. They ariſe from the ordinary and extraordinary ſubſidies of the ſtates; his own demeſnes, conſiſting of 72 bailiwics; the impoſt on beer, and the fine porcelain of the country; tenths of corn, fruit, wine, &c. his own ſilver mines, and the tenths of thoſe that belong to particulars: all which, added together, bring in a yearly revenue of betwixt 700,000l. and 800,000l. yet the electorate is at preſent deeply in debt. The regular troops commonly amount to 20,000 men, excluſive of the militia of the ban, the arriere-ban, and the body of miners and hunters, who are obliged in time of war to bear arms. The whole electorate is divided into circles.

The electoral circle, or the duchy of Saxony, is bounded by the circles of Meiſſen, Leipzig, and Thuringia, the principality of Anhalt, the marche of Brandenburg, and Luſatia. The principality of Anhalt lies acroſs it, and divides it into two parts. Its greateſt length and breadth is computed at about 40 miles; but though it is watered by the Elbe, the Black-Elſter, and the Mulde, it is not very fruitful, the ſoil for the moſt part conſiſting of ſand. It contains 24 towns, three boroughs, betwixt 400 and 500 villages, 164 noblemen's eſtates, 11 ſuperintendencies, three inſpections, under one conſiſtory, and 11 prefectorates or diſtricts. The preſent duchy of Saxony is not to be confounded with the old; for the latter was of a much greater extent, and contained in it thoſe large tracts anciently called *Eaſtphalia*, *Engern*, and *Weſtphalia*, of which the electoral circle was no part, but was taken by Albert the Bear, margrave of Salzwedel, from the Venedi. His ſon

* See Reformation, n° 8.

† See Porcelain, n° 23, 24.

Saxony. Saxony ‖ Scabiosa.

ſon Bernard obtaining the dignity of duke of Saxony from the emperor Frederic I. the name of *duchy* was given to this country; and the electorial dignity having been afterwards annexed to the duchy, it acquired thereby alſo the name of the *electoral circle*.

The country of Saxony is remarkable for being the mother of the preſent Engliſh nation; but concerning the Saxons themſelves, previous to that period, we have very few particulars. The Saxons (ſays Mr Whitaker) have been derived by our hiſtorians from very different parts of the globe; India, the north of Aſia, and the foreſts of Germany. And their appellation has been equally referred to very different cauſes; the name of their Indian progenitor, the plundering diſpoſition of their Aſiatic fathers, and the ſhort hooked weapons of their warriors. But the real origin of the Saxons, and the genuine derivation of their name, ſeem clearly to be theſe.

In the earlier period of the Gallic hiſtory, the Celtæ of Gaul croſſed the Rhine in conſiderable numbers, and planted various colonies in the regions beyond it. Thus the Volcæ Tectoſages ſettled on one ſide of the Hercynian foreſt and about the banks of the Neckar, the Helvetii upon another and about the Rhine and Maine, the Boii beyond both, and the Senones in the heart of Germany. Thus alſo we ſee the Treviri, the Nervii, the Suevi, and the Marcomanni, the Quadi, the Venedi, and others, in that country; all plainly betrayed to be Gallic nations by the Gallic appellations which they bear, and all together poſſeſſing the greateſt part of it. And, even as late as the concluſion of the firſt century, we find one nation on the eaſtern ſide of this great continent actually ſpeaking the language of Gaul, and another upon the northern uſing a dialect nearly related to the Britiſh. But as all the various tribes of the Germans are conſidered by Strabo to be γνησιοι Γαλαται, or genuine Gauls in their origin; ſo thoſe particularly that lived immediately beyond the Rhine, and are aſſerted by Tacitus to be indubitably native Germans, are expreſsly denominated Γαλαται, or Gauls, by Diodorus, and as expreſsly declared by Dio to have been diſtinguiſhed by the equivalent appellation of *Celta* from the earlieſt period. And the broad line of nations, which extended along the ocean, and reached to the borders of Scythia, was all known to the learned in the days of Diodorus, by the ſame ſignificant appellation of Γαλαται, or Gauls.

Of theſe, the moſt noted were the Si-Cambri and Cimbri; the former being ſeated near the channel of the Rhine, and the latter inhabiting the peninſula of Jutland. And the denominations of both declare their original; and ſhow them to have been derived from the common ſtock of the Celtæ, and to be of the ſame Celtic kindred with the Cimbri of Engliſh Somerſetſhire, and the Cymbri or Cambrians of Britiſh Wales. The Cimbri are accordingly denominated *Celtæ* by Strabo and Appian. And they are equally aſſerted to be Gauls by Diodorus; to be the deſcendants of that nation which ſacked the city of Rome, plundered the temple of Delphi, and ſubdued a great part of Europe and ſome of Aſia.

Immediately to the ſouth of theſe were the Saxons, extending from the iſthmus of the Cherſoneſus to the current of the Elbe. And they were equally Celtic in their origin as their neighbours. They were denominated *Ambrones* as well as Saxons; and, as ſuch, are included by Tacitus under the general appellation of *Cimbri*, and comprehended in Plutarch under the equal one of *Celto-Scythæ*. And the name of *Ambrones* appears particularly to have been Gallic; being common to the Saxons beyond the Elbe, and the Ligurians in Ciſalpine Gaul; as both found to their ſurpriſe, on the irruption of the former into Italy with the Cimbri. And, what is equally ſurpriſing, and has been equally unnoticed by the critics, the Welſh diſtinguiſh England by the name of *Loeger* or *Liguria*, even to the preſent moment. In that irruption theſe Saxons, Ambrons, or Ligurians, compoſed a body of a more than 30,000 men, and were principally concerned in cutting to pieces the large armies of Manlius and Cæpio. Nor is the appellation of *Saxons* leſs Celtic than the other. It was originally the ſame with the Belgic Sueſſones of Gaul; the capital of that tribe being now intitled *Soiſons* by the French, and the name of the Saxons pronounced *Saiſen* by the Welſh, *Saſon* by the Scotch, and *Saſenach* or *Saxſenach* by the Iriſh. And the Sueſſones or Saxones of Gaul derived their own appellation from the poſition of their metropolis on a river, the ſtream at Soiſons being now denominated the *Aiſne*, and formerly the *Axon*; Ueſſ-on or Axon importing only waters or a river, and S ueſſ-on or S-ax-on the waters or the river. The Sueſſones, therefore, are actually denominated the *Ueſſones* by Ptolemy; and the Saxones are actually intitled the *Axones* by Lucan.

Theſe, with their brethren and allies the Cimbri, having been more formidable enemies to the Romans by land, than the Samnites, Carthaginians, Spaniards, Gauls, or Parthians, in the ſecond century applied themſelves to navigation, and became nearly as terrible by ſea. They ſoon made themſelves known to the inhabitants of the Britiſh iſles by their piracies in the northern channels, and were denominated by them *Lochlyn* or *Lochlynach*; luch-lyn ſignifying the people of the wave, and the D being quieſcent in the pronunciation. They took poſſeſſion of the Orkney iſlands, which were then merely large ſhoals of ſand, uncovered with woods, and overgrown with ruſhes; and they landed in the north of Ireland, and ravaged the country. Before the middle of the third century they made a ſecond deſcent upon the latter, diſembarked a conſiderable body of men, and deſigned the abſolute ſubjection of the iſland. Before the concluſion of it, they carried their naval operations to the ſouth, infeſted the Britiſh channel with their little veſſels, and made frequent deſcents upon the coaſt. And in the fourth and fifth centuries, acting in conjunction with the Picts of Caledonia and the Scots of Ireland, they ravaged all the eaſtern and ſouth-eaſtern ſhores of Britain, began the formal conqueſt of the country, and finally ſettled their victorious ſoldiery in Lancaſhire.

SAY, or Saye, in commerce, a kind of ſerge much uſed abroad for linings, and by the religious for ſhirts; with us it is uſed for aprons by ſeveral ſorts of artificers, being uſually died green.

SCAB. See Itch and Medicine.

Scab in Sheep. See Sheep.

SCABIOSA, Scabious, in botany: A genus of the monogynia order, belonging to the tetrandria claſs of

Scabrita ‖ Scalado.

of plants; and in the natural method ranking under the 48th order, *Aggregatæ*. The common calyx is polyphyllous; the proper one is double superior; the receptacle is paleaceous or naked. The moſt remarkable ſpecies are, 1. The arvenſis, or meadow-ſcabious, grows naturally in many places of Britain. It hath a ſtrong, thick, fibrous root, ſending out many branching ſtalks, which riſe to the height of three feet; the lower leaves are ſometimes almoſt entire, and at others they are cut into many ſegments almoſt to the midrib. The flowers are produced upon naked footſtalks at the end of the branches; they are of a purple colour, and have a faint odour. 2. The ſucciſa, or devil's bit, grows naturally in woods and moiſt places. This has a ſhort tap-root, the end of which appears as if it was bitten or cut off, whence the plant has taken its name. The leaves are oval and ſpear-ſhaped, and ſmooth; the ſtalks are ſingle, about two feet high, garniſhed with two leaves at each joint; they generally ſend out two ſhort foot-ſtalks from their upper joint, ſtanding oppoſite, which are terminated by purple flowers.—Both theſe have been recommended as aperient, ſudorific, and expectorant; but the preſent practice has no dependence on them.

SCABRITA, in botany: A genus of the monogynia order, belonging to the tetrandria claſs of plants. The corolla is monopetalous, and ſalver-ſhaped; there are two ſeeds emarginated ſuperior; the calyx is truncated.

SCÆVOLA (C. Mucius), a young Roman of illuſtrious birth, is particularly celebrated in the Roman hiſtory for a brave but unſucceſsful attempt upon the life of Porſena king of Hetruria, about the year before Chriſt 504. See the article Rome, n° 71.

Scævola, in botany: A genus of the monogynia order, belonging to the pentandria claſs of plants. The corolla is monopetalous; the tube ſlit longitudinally; the border quinquefid and lateral. The fruit is a plum inferior and monoſpermous; the nucleus bilocular.

SCAFFOLD, among builders, an aſſemblage of planks and boards, ſuſtained by treſſels and pieces of wood fixed in the wall; whereon maſons, bricklayers, &c. ſtand to work, in building high walls, and plaſterers in plaſtering cielings, &c.

Scaffold, alſo denotes a timber work raiſed in the manner of an amphitheatre, for the more commodious viewing any ſhow or ceremony: it is alſo uſed for a little ſtage raiſed in ſome public place, whereon to behead criminals.

SCALA nova (anciently Neapolis), called by the Turks *Kouſhadaſe*, is ſituated in a bay, on the ſlope of a hill, the houſes riſing one above another, intermixed with minarees and tall ſlender cypreſſes. "A ſtreet, through which we rode (ſays Dr Chandler †), was hung with goat-ſkins expoſed to dry, died of a moſt lively red. At one of the fountains is an ancient coffin uſed as a ciſtern. The port was filled with ſmall craft. Before it is an old fortreſs on a rock or iſlet frequented by gulls and ſea-mews. By the water-ſide is a large and good khan, at which we paſſed a night on our return. This place belonged once to the Epheſians, who exchanged it with the Samians for a town in Caria."

† Travels in Aſia Minor.

SCALADO, or Scallade, in the art of war, a furious aſſault made on the wall or rampart of a city, or other fortified place, by means of ladders, without carrying on works in form, to ſecure the men.

Scald ‖ Scarlet.

SCALD cream, ſometimes alſo called *Clouted cream*: a curious method of preparing cream for butter, almoſt peculiar to Devonſhire. Dr Hales, in Philoſophical Tranſactions, volume 49, page 342, 1755, part 1ſt, gives ſome account of the method of preparing this delicate and luxurious article: other writers alſo ſpeak of it. With an elucidation or two, we ſhall nearly quote Mr Feltham's account from the Gentleman's Magazine, volume 61. part 2. It is there obſerved, that the purpoſe of making ſcald-cream is far ſuperior butter than can be procured from the uſual raw cream, being preferable for flavour and keeping; to which thoſe accuſtomed are ſo partial, as ſeldom to eat any other. As leaden ciſterns would not anſwer for ſcalding cream, the dairies moſtly adopt braſs pans, which hold from three to five gallons for the milk; and that which is put into thoſe pans one morning, ſtands till the next, when, without diſturbing it, it is ſet over (on a trivet) a ſteady briſk wood fire, devoid of ſmoke, where it is to remain from ſeven to fifteen minutes, according to the ſize of the pan, or the quantity in it: the preciſe time of removing it from the fire muſt be particularly attended to, and is, when the ſurface begins to wrinkle or to gather in a little, ſhowing ſigns of being near the agitation of boiling, which it muſt by no means do; it is then inſtantly to be taken off, and placed in the dairy until the next morning, when the fine cream is thrown up, and may be taken for the table, or for butter, into which it is now ſoon converted by ſtirring it with the hand. Some know when to remove it from the fire by ſounding the pan with the finger, it being then leſs ſonorous; but this is only acquired by experience. Dr Hales obſerves, that this method of preparing milk will take off the ill taſte it ſometimes acquires from the cows feeding on turnips, cabbage, &c.

SCALDS, in the hiſtory of literature, a name given by the ancient inhabitants of the northern countries to their poets; in whoſe writings their hiſtory is recorded.

SCALE, a mathematical inſtrument conſiſting of ſeveral lines drawn on wood, braſs, ſilver, &c. and variouſly divided, according to the purpoſes it is intended to ſerve; whence it acquires various denominations, as the *plain ſcale*, *diagonal ſcale*, *plotting ſcale*, &c. See Geometry.

Scale, in muſic, ſometimes denominated a *gamut*, a *diagram*, a *ſeries*, an *order*, a *diapaſon*. It conſiſts of the regular gradations of ſound, by which a compoſer or performer, whether in riſing or deſcending, may paſs from any given tune to another. Theſe gradations are ſeven. When this order is repeated, the firſt note of the ſecond is conſentaneous with the loweſt note of the firſt; the ſecond of the former with the ſecond of the latter; and ſo through the whole octave. The ſecond order, therefore, is juſtly eſteemed only a repetition of the firſt. For this reaſon the ſcale, among the moderns, is ſometimes limited to an octave; at other times extended to the compaſs of any particular voice or inſtrument. It likewiſe frequently includes all the practical gradations of muſical ſound, or the whole number of octaves employed in compoſition or execution, arranged in their natural order.

SCALENE, or Scalenous Triangle, *ſcalenum*, in geometry, a triangle whoſe ſides and angles are unequal. See Geometry.

SCA-

Scalenus, Scaliger.

SCALENUS, in anatomy. See there, *Table of the Muſcles.*

SCALIGER (Julius Cæſar), a learned critic, poet, phyſician, and philoſopher; was born at the caſtle of Ripa, in the territories of Verona, in 1484: and is ſaid to have been deſcended from the ancient princes of Verona, though this is not mentioned in the letters of naturalization he obtained in France in 1528. He learned the firſt rudiments of the Latin tongue in his own country; and in his 12th year was preſented to the Emperor Maximilian, who made him one of his pages. He ſerved that emperor 17 years, and gave ſignal proofs of his valour and conduct in ſeveral expeditions. He was preſent at the battle of Ravenna in April 1512, in which he had the misfortune to loſe his father Benedict Scaliger, and his brother Titus; on which his mother died with grief: when being reduced to neceſſitous circumſtances, he entered into the order of the Franciſcans and applied himſelf to ſtudy at Bologna; but ſoon after changing his mind with reſpect to his becoming a monk, he took arms again, and ſerved in Piedmont. At which time a phyſician perſuaded him to ſtudy phyſic, which he did at his leiſure-hours, and alſo learned Greek; and at laſt the gout determined him, at 40 years of age, to abandon a military life. He ſoon after ſettled at Agen, where he married, and began to apply himſelf ſeriouſly to his ſtudies. He learned firſt the French tongue, which he ſpoke perfectly in three months; and then made himſelf maſter of the Gaſcon, Italian, Spaniſh, German, Hungarian, and Sclavonian: but the chief object of his ſtudies was polite literature. Meanwhile, he ſupported his family by the practice of phyſic. He did not publiſh any of his works till he was 47 years of age; when he ſoon gained a great name in the republic of letters. He had a graceful perſon, and ſo ſtrong a memory, even in his old age, that he dictated to his ſon 200 verſes which he had compoſed the day before, and retained without writing them down. He was ſo charitable, that his houſe was as it were an hoſpital for the poor and ſick; and he had ſuch an averſion to lying, that he would have no correſpondence with thoſe who were given to that vice; but, on the other hand, he had much vanity, and a ſatirical ſpirit, which created him many enemies. He died of a retention of urine in 1558. He wrote in Latin, 1. A Treatiſe on the Art of Poetry. 2. Exercitations againſt Carden: which works are much eſteemed. 3. Commentaries on Ariſtotle's Hiſtory of Animals, and on Theophraſtus on Plants. 4. Some Treatiſes on Phyſic, 5. Letters, Orations, Poems, and other works.

Scaliger (Joſeph Juſtus), one of the moſt learned critics and writers of his time; he was the ſon of the former, and was born at Agen in France in 1540. He ſtudied in the college of Bourdeaux; after which his father took him under his own care, and employed him in tranſcribing his poems; by which means he obtained ſuch a taſte for poetry, that before he was 17 years old he wrote a tragedy upon the ſubject of Oedipus, in which he introduced all the poetical ornaments of ſtyle and ſentiment. His father dying in 1558, he went to Paris the year following, with a deſign to apply himſelf to the Greek tongue. For this purpoſe he for two months attended the lectures of Turnebus; but finding that in the uſual courſe he ſhould be a long time in gaining his point, he ſhut himſelf up in his cloſet, and by conſtant application for two years gained a perfect knowledge of that language. After which he applied to the Hebrew, which he learned by himſelf with great facility. He made no leſs progreſs in the ſciences; and his writings procured him the reputation of one of the greateſt men of that or any other age. He embraced the reformed religion at 22 years of age. In 1563, he attached himſelf to Lewis Caſtiegnier de la Roch Pozay, whom he attended in ſeveral journeys; and in 1593, was invited to accept of the place of honorary profeſſor of the univerſity of Leyden, which he complied with. He died of a dropſy in that city in 1609. He was a man of great temperance; was never married; and was ſo cloſe a ſtudent, that he often ſpent whole days in his ſtudy without eating; and though his circumſtances were always very narrow, he conſtantly refuſed the preſents that were offered him. He publiſhed many works; the principal of which are, 1. Notes on Seneca's Tragedies, on Varro, Auſonius, Pompeius Feſtus, &c. 2. His Latin Poems. 3. A Treatiſe *de Emendatione Temporum.* 4. Euſebius's Chronicle with Notes. 5. *Canones Iſagogici;* and many other works. The collections intitled *Scaligeriana*, were collected from his converſations by one of his friends; and being ranged into alphabetical order, were publiſhed by Iſaac Voſſius.

Scallop ‖ Scammony.

SCALLOP, in ichthyology. See Pecten.

In the Highlands of Scotland, the great ſcallop ſhell is made uſe of for the ſkimming of milk. In old times, it had a more honourable place; being admitted into the halls of heroes, and was the cup of their feſtivity when the tribe aſſembled in the hall of their chieftain.

SCALPEL, in ſurgery, a kind of knife uſed in anatomical diſſections and operations in ſurgery.

SCALPER, or Scalping-Iron, a ſurgeon's inſtrument uſed for ſcraping foul carious bones.

SCALPING, in military hiſtory, a barbarous cuſtom, in practice among the Indian warriors, of taking off the tops of the ſcalps of the enemies' ſkulls with their hair on. They preſerve them as trophies of their victories, and are rewarded by their chiefs according to the number of ſcalps they bring in.

SCALPRA Dentalia, inſtruments uſed by the ſurgeons to take off thoſe black, livid, or yellow cruſts which infeſt the teeth, and not only looſe and deſtroy them, but taint the breath.

SCAMMONY, a concreted vegetable juice of a ſpecies of convolvulus, partly of the reſin, and partly of the gum kind. See Convolvulus.

The beſt ſcammony comes from Aleppo, in light ſpongy maſſes, eaſily friable, of a ſhining aſh-colour verging to black; when powdered, of a light grey or whitiſh-colour: an inferior ſort is brought from Smyrna, in more compact ponderous pieces, of a darker colour, and full of ſand and other impurities. This juice is chiefly of the reſinous kind; rectified ſpirit diſſolves five ounces out of ſix, the remainder is a mucilaginous ſubſtance mixed with droſs; proof-ſpirit totally diſſolves it, the impurities only being left. It has a faint unpleaſant ſmell, and a bitteriſh, ſomewhat acrimonious, taſte.

Scammony is an efficacious and ſtrong purgative. Some have condemned it as unſafe, and laid ſundry ill qualities to its charge; the principal of which is, that

Scandalum Scandinavia.

its operation is uncertain, a full dose proving sometimes ineffectual, while at others a much smaller one occasions dangerous hypercathartics. This difference, however, is owing entirely to the different circumstances of the patient, and not to any ill quality or irregularity of operation of the medicine: when the intestines are filled with an excessive load of mucus, the scammony passes through without exerting its action upon them; where the natural mucus is deficient, a small dose of this or any other resinous cathartic irritates and inflames. Many have endeavoured to abate the force of this drug, and correct its imaginary virulence, by exposing it to the fume of sulphur, dissolving it in acid juices, and the like; but this could do no more than destroy as it were a part of the medicine, without making any alteration in the rest. Scammony in substance, judiciously managed, stands not in need of any corrector: if triturated with sugar or with almonds, it becomes sufficiently safe and mild in operation. It may likewise be conveniently dissolved by trituration in a strong decoction of liquorice, and then poured off from the fæces: the college of Wertemberg assures us, that by this treatment it becomes mildly purgative, without being attended with gripes, or other inconveniences; and that it likewise proves inoffensive to the palate. The common dose of scammony is from three to twelve grains.

SCANDALUM Magnatum, in law, is a defamatory speech or writing to the injury of a person of dignity; for which a writ that bears the same name is granted for the recovery of damages.

SCANDERBEG, the surname of George Castriot king of Albania, a province of Turkey in Europe, dependent on the Ottoman empire. He was delivered up with his three elder brothers as hostages, by their father, to Amurath II. sultan of the Turks, who poisoned his brothers, but spared him on account of his youth, being likewise pleased with his juvenile wit and amiable person. In a short time he became one of the most renowned generals of the age; and revolting from Amurath, he joined Hunniade Corvin, a most formidable enemy to the Ottoman power. He defeated the sultan's army, took Amurath's secretary prisoner, obliged him to sign and seal an order to the governor of Croia, the capital of Albania, to deliver up the citadel and city to the bearer of that order, in the name of the sultan. With this forged order he repaired to Croia; and thus recovered the throne of his ancestors, and maintained the independency of his country against the numerous armies of Amurath and his successor Mahommed II. who was obliged to make peace with this hero in 1461. He then went to the assistance of Ferdinand of Arragon, at the request of Pope Pius II. and by his assistance Ferdinand gained a complete victory over his enemy the count of Anjou. Scanderbeg died in 1467.

SCANDEROON. See Alexandretta.

SCANDINAVIA, a general name for the countries of Norway, Sweden, and Denmark, anciently under the dominion of one prince. The inhabitants of these countries, in former times, were excessively addicted to war. From their earliest years they applied themselves to the military art, and accustomed themselves to cold, fatigue, and hunger. Even the very sports of youth and childhood were dangerous. They consisted in taking frightful leaps, climbing up the most steep rocks, fighting naked with sharp-edged knives, wrestling with the utmost rage: these exercises used to be so much practised, that [illegible] arrive in the combat at the age of [illegible]. At this age the young men became their own masters; which they did by receiving a sword, a buckler, and a lance. This ceremony was performed at some public meeting. One of the principal men of the assembly armed the youth in person; after which he was obliged to provide for his own subsistence, and was either now to live by hunting, or by joining in some incursion against the enemy. Great care was taken to prevent the young men from too early connections with the female sex; and indeed they could have no hope to gain the affection of the fair, but in proportion to the courage and address they had shown in their military exercises. Accordingly, in an ancient song, we find Bartholin, king of Norway, extremely surprized that his mistress should prove unkind, as he could perform eight different exercises. The children were generally born in camps; and being inured from their infancy to behold nothing but arms, effusion of blood, and slaughter, they imbibed the cruel disposition of their fathers, and when they broke forth upon other nations, behaved rather like furies than like human creatures.

Scandinavia.

The laws of this people, in some measure resembled those of the ancient Lacedemonians. They knew no virtue but bravery, and no vice but cowardice. The greatest penalties were inflicted on such as fled from battle. The laws of the ancient Danes declared such persons infamous, and excluded them from society. Among the Germans, cowards were sometimes suffocated in mud; after which they were covered over with hurdles, to show, says Tacitus, that though the punishment of crimes should be public, there are certain degrees of cowardice and infamy which ought to be buried in oblivion. Frotho king of Denmark enacted, by law, that whoever solicited an eminent post ought upon all occasions to attack one enemy, to face two, to retire only one step back from three, and never to make an actual retreat till assaulted by four. The rules of justice themselves were adapted and warped to these prejudices. War was looked upon as a real act of justice, and force was thought to be an incontestible title over the weak, and a visible mark that God had intended them to be subject to the strong. They had no doubt but that the intentions of the Deity had been to establish the same dependence among men that takes place among inferior creatures; and, setting out from this principle of the natural *inequality* among men, they had from thence inferred that the weak had no right to what they could not defend. This maxim was adopted with such rigour, that the name of divine judgment was given not only to the judiciatory combat, but to conflicts and battles of all sorts; victory being, in their opinion, the only certain mark by which providence enables us to distinguish those whom it has appointed to command others.—Lastly, their religion, by annexing eternal happiness to the military virtues, gave the utmost possible degree of vigour to that propensity which these people had for war, and to their contempt of death, of which we shall now give some instances. We are informed that Harold, surnamed *Blaatand*, or *Blue-tooth*, a king of Denmark, who lived in the beginning

Scandinavia. ginning of the ninth century, had founded on the coaſts of Pomerania a city named *Julin* or *Jomſburg*. To this place he ſent a colony of young Danes, beſtowing the government on a celebrated warrior called *Palnatoko*. In this colony it was forbidden to mention the word *fear*, even in the moſt imminent dangers. No citizen of Jomſburg was to yield to any number of enemies however great. The ſight of inevitable death was not to be taken as an excuſe for ſhowing the ſmalleſt apprehenſion. And this legiſlator really appears to have eradicated from the minds of moſt of the youths bred up under him, all traces of that ſentiment ſo natural and ſo univerſal, which makes men think on their deſtruction with horror. Nothing can ſhow this better than a ſingle fact in their hiſtory, which deſerves to have place here for its ſingularity. Some of them having made an irruption into the territories of a powerful Norwegian lord, named *Haquin*, were overcome in ſpite of the obſtinacy of their reſiſtance; and the moſt diſtinguiſhed among them being made priſoners, were, according to the cuſtom of thoſe times, condemned to death. The news of this, far from afflicting them, was on the contrary received with joy. The firſt who was led to puniſhment was content to ſay, without changing countenance, and without expreſſing the leaſt ſign of fear, "Why ſhould not the ſame happen to me as did to my father? He died, and ſo muſt I." A warrior, named *Thorchill*, who was to cut off the head of the ſecond, having aſked him what he felt at the ſight of death, he anſwered, "that he remembered too well the laws of Jomſburg to utter any words that denoted fear." The third, in reply to the ſame queſtion, ſaid, "he rejoiced to die with glory; and that he preferred ſuch a death to an infamous life like that of Thorchill's." The fourth made an anſwer much longer and more extraordinary. "I ſuffer with a good heart; and the preſent hour is to me very agreeable. I only beg of you (added he, addreſſing himſelf to Thorchill) to be very quick in cutting off my head; for it is a queſtion often debated by us at Jomſburg, whether one retains any ſenſe after being beheaded. I will therefore graſp this knife in my hand; if, after my head is cut off, I ſtrike it towards you, it will ſhow I have not loſt all ſenſe; if I let it drop, it will be a proof of the contrary. Make haſte, therefore, and decide the diſpute." Thorchill, adds the hiſtorian, cut off his head in a moſt expeditious manner; but the knife, as might be expected, dropt from his hand. The fifth ſhowed the ſame tranquillity, and died rallying and jeering his enemies. The ſixth begged of Thorchill, that he might not be led to puniſhment like a ſheep: "Strike the blow in my face (ſaid he), I will ſit ſtill without ſhrinking; and take notice whether I once wink my eyes, or betray one ſign of fear in my countenance: for we inhabitants of Jomſburg are uſed to exerciſe ourſelves in trials of this ſort, ſo as to meet the ſtroke of death without once moving." He kept his promiſe before all the ſpectators, and received the blow without betraying the leaſt ſign of fear, or ſo much as winking with his eyes. The ſeventh, ſays the hiſtorian, was a very beautiful young man, in the flower of his age. His long hair, as fine as ſilk, floated in curls and ringlets on his ſhoulders. Thorchill aſked him, what he thought of death? "I receive it willingly (ſaid he), ſince I have fulfilled the greateſt duty of life, and have ſeen all thoſe put to death whom I would not ſurvive. I only beg of you one favour, not to let my hair be touched by a ſlave, or ſtained with my blood." Scandinavia

Neither was this intrepidity peculiar to the inhabitants of Jomſburg; it was the general character of all the Scandinavians, of which we ſhall only give this further inſtance. A warrior, having been thrown upon his back in wreſtling with his enemy, and the latter finding himſelf without his arms, the vanquiſhed perſon promiſed to wait, without changing his poſture, till his antagoniſt fetched a ſword to kill him; and he faithfully kept his word.—To die with his arms in his hand was the ardent wiſh of every free man; and the pleaſing idea which they had of this kind of death led them to dread ſuch as proceeded from old age and diſeaſe. The hiſtory of ancient Scandinavia is full of inſtances of this way of thinking. The warriors who found themſelves lingering in diſeaſe, often availed themſelves of their few remaining moments to ſhake off life, by a way that they ſuppoſed to be more glorious. Some of them would be carried into a field of battle, that they might die in the engagement. Others ſlew themſelves: many procured this melancholy ſervice to be performed by their friends, who conſidered it as a moſt ſacred duty. "There is, on a mountain of Iceland, (ſays the author of an old Iceland romance), a rock ſo high, that no animal can fall from the top and live. Here men betake themſelves when they are afflicted and unhappy. From this place all our anceſtors, even without waiting for ſickneſs, have departed into Eden. It is uſeleſs, therefore, to give ourſelves up to groans and complaints, or to put our relations to needleſs expences, ſince we can eaſily follow the example of our fathers, who have all gone by the way of this rock."—When all theſe methods failed, and at laſt when Chriſtianity had baniſhed ſuch barbarous practices, the diſconſolate heroes conſoled themſelves by putting on complete armour as ſoon as they found their end approaching. Scandinavia ‖ Scanning.

SCANDIX, Shepherds Needle, or *Venus Comb*, in botany: A genus of the digynia order, belonging to the pentandria claſs of plants; and in the natural method ranking under the 45th order, *Umbellatæ*. The corolla is radiating; the fruit ſubulated; the petals emarginated; the florets of the diſc frequently male. The moſt remarkable ſpecies is the odorata, with angular furrowed ſeeds. It is a native of Germany; and has a very thick perennial root, compoſed of many fibres, of a ſweet aromatic taſte like aniſeed, from which come forth many large leaves that branch out ſomewhat like thoſe of fern, from whence it is named *ſweet-fern*. The ſtalks grow four or five feet high, are fiſtulous and hairy; the flowers are diſpoſed in an umbel at the top of the ſtalk, are of a white colour, and have a ſweet aromatic ſcent.—This ſpecies is eaſily progagated by ſeeds, which, if permitted to ſcatter, will ſupply an abundance of young plants, that may be put into any part of the garden, and require no care.

SCANNING, in poetry, the meaſuring of verſe by feet, in order to ſee whether or not the quantities be duly obſerved. The term is chiefly uſed in Greek and Latin verſes. Thus an hexameter verſe is ſcanned by reſolving it into ſix feet; a pentameter, by reſolving it into five feet, &c.

SCANTO,

Scanto
&
Scapula.

SCANTO, or SPAVENTO, a ſudden impreſſion of horror upon the mind and body. It is extremely dreaded by the inhabitants of Sicily; and the wild ideas of the vulgar part of the inhabitants reſpecting it are almoſt incredible, and their dread of a ſudden ſhock is no leſs ſurprizing. There is ſcarce a ſymptom, diſorder, or accident, they do not think may befal the human frame in conſequence of the ſcanto. They are perſuaded that a man who has been frightened only by a dog, a viper, ſcorpion, or any other creature, which he has an antipathy to, will ſoon be ſeized with the ſame pains he would really feel, had he been torn with their teeth or wounded with their venomous ſting; and that nothing can remove theſe nervous imaginary pangs but a ſtrong doſe of dilena, a ſpecies of cantharides found in Sicily.

Swinburne's Travels in the two Sicilies.

SCAPE-GOAT, in the Jewiſh antiquities, the goat which was ſet at liberty on the day of ſolemn expiation. For the ceremonies on this occaſion, ſee Levit. xvi. 5, 6, &c.

Some ſay, that a piece of ſcarlet cloth, in form of a tongue, was tied on the forehead of the ſcape-goat. *Hoff. Lex. Univ. in voc. Lingua.*

Many have been the diſputes among the interpreters concerning the meaning of the word *ſcape-goat*; or rather of *azazel*, for which *ſcape-goat* is put in our verſion of the Bible.

Spencer is of opinion, that azazel is a proper name, ſignifying the devil or evil dæmon. See his reaſons in his book *De leg. Hebr. ritual.* Diſſert. viii. Among other things, he obſerves, that the ancient Jews uſed to ſubſtitute the name *Samaël* for *Azazel*; and many of them have ventured to affirm, that at the feaſt of expiation they were obliged to offer a gift to Samael to obtain his favour. Thus alſo the goat, ſent into the wilderneſs to Azazel, was underſtood to be a gift or oblation. Some Chriſtians have been of the ſame opinion. But Spencer thinks that the genuine reaſons of the ceremony were, 1. That the goat, loaded with the ſins of the people, and ſent to Azazel, might be a ſymbolical repreſentation of the miſerable condition of ſinners. 2. God ſent the goat thus loaded to the evil dæmons, to ſhow that they were impure, thereby to deter the people from any converſation or familiarity with them. 3. That the goat ſent to Azazel, ſufficiently expiating all evils, the Iſraelites might the more willingly abſtain from the expiatory ſacrifices of the Gentiles.

SCAPULA, in anatomy, the ſhoulder, or ſhoulder-bone.

SCAPULA (John), the reputed author of a Greek lexicon, ſtudied at Lauſanne. His name is recorded in the annals of literature, neither on account of his talents nor learning, nor virtuous induſtry, but for a groſs act of diſhonеſty and fraud which he committed againſt an eminent literary character of the 16th century. Being employed by Henry Stephens as a corrector to his preſs while he was publiſhing his *Theſaurus linguæ Græcæ*, Scapula extracted thoſe words and explications which he reckoned moſt uſeful, compriſed them in one volume, and publiſhed them as an original work, with his own name.

The compilation and printing of the Theſaurus had coſt Stephens immenſe labour and expence; but it was ſo much admired by theſe learned men to whom he had ſhown it, and ſeemed to be of ſuch eſſential importance to the acquiſition of the Greek language, that he reaſonably hoped his labour would be crowned with honour, and the money he had expended would be repaid by a rapid and extenſive ſale. But before his work came abroad, Scapula's abridgement appeared; which, from its ſize and price, was quickly purchaſed, while the Theſaurus itſelf lay neglected in the author's hands. The conſequence was a bankruptcy on the part of Stephens, while he who had occaſioned it was enjoying the fruits of his treachery. Scapula's Lexicon was firſt printed in 1570, in 4to. It was afterwards enlarged, and publiſhed in folio. It has gone through ſeveral editions, while the valuable work of Stephens has never been reprinted. Its ſucceſs is, however, not owing to its ſuperior merit, but to its price and more commodious ſize. Stephens charges the author with omitting a great many important articles. He accuſes him of miſunderſtanding and perverting his meaning; and of tracing out abſurd and trifling etymologies, which he himſelf had been careful to avoid. He compoſed the following epigram on Scapula:

Quidam furtivas me capulo tenis abdidit enſem
Aſſer eram a Scapulis, ſcamus et huc redeo.

Doctor Buſby, ſo much celebrated for his knowledge of the Greek language, and his ſucceſs in teaching it, would never permit his ſcholars at Weſtminſter ſchool to make uſe of Scapula.

SCAPULAR, in anatomy, the name of two pair of arteries, and as many veins.

SCAPULAR, or *Scapulary*, a part of the habit of ſeveral religious orders in the church of Rome, worn over the gown as a badge of peculiar veneration for the Bleſſed Virgin. It conſiſts of two narrow ſlips or breadths of cloth covering the back and the breaſt, and hanging down to the feet.—The devotees of the ſcapulary celebrate its feſtival on the 10th of July.

SCARABÆUS, the BEETLE, in zoology, a genus of inſects of the coleoptera order: the antennæ of the beetles are of a clavated figure, and fiſſile longitudinally; and their legs are frequently dentated. There are 87 ſpecies; all, however, concurring in one common formation of having caſes to their wings, which are the more neceſſary to thoſe inſects, as they often live under the ſurface of the earth, in holes which they dig out by their own induſtry. The caſes prevent the various injuries their real wings might ſuſtain by rubbing or cruſhing againſt the ſides of their abode. Theſe, though they do not aſſiſt flight, yet keep the internal wings clean and even, and produce a loud buzzing noiſe when the animal riſes in the air.

If we examine the formation of all animals of the beetle kind, we ſhall find, as in ſhell fiſh, that their bones are placed externally, and their muſcles within. Theſe muſcles are formed very much like thoſe of quadrupeds; and are formed with ſuch ſurpriſing ſtrength, that, bulk for bulk, they are a thouſand times ſtronger than thoſe of a man. The ſtrength of theſe muſcles is of uſe in digging the animal's ſubterraneous abode, whither it moſt frequently returns, even after it becomes a winged inſect capable of flying.

Beſides the difference which reſults from the ſhape and colour of theſe animals, the ſize alſo makes a conſiderable one; ſome beetles being not larger than the

Scarabæus. head of a pin; while others, ſuch as the elephant beetle, are as big as one's fiſt. But the greateſt difference among them is, that ſome are produced in a month, and in a ſingle ſeaſon go through all the ſtages of their exiſtence; while others take near four years to their production, and live as winged inſects a year more.

The may-bug, dorr-beetle, or cock-chaffer, has, like all the reſt, a pair of caſes to its wings, which are of a reddiſh brown colour, ſprinkled with a whitiſh duſt, which eaſily comes off. In ſome years their necks are ſeen covered with a red plate, and in others with a black; theſe, however, are diſtinct ſorts, and their difference is by no means accidental. The fore-legs are very ſhort, and the better calculated for burrowing in the ground, where this inſect makes its retreat. It is well known, for its evening buzz, to children; but ſtill more formidably introduced to the acquaintance of the huſbandman and gardener, for in ſome ſeaſons it has been found to ſwarm in ſuch numbers as to eat up every vegetable production.

The two ſexes in the may-bug are eaſily diſtinguiſhed from each other, by the ſuperior length of the tufts, at the end of the horns, in the male. They begin to copulate in ſummer; and at that ſeaſon they are ſeen joined together for a conſiderable time. They fly about in this ſtate, the one hanging pendant from the tail of the other. It has been ſuppoſed, that, like ſnails, they are hermaphrodites, as there ſeems to be a mutual inſertion.

The female being impregnated, quickly falls to boring a hole into the ground, wherein to depoſit her burden. This is generally about half a foot deep; and in it ſhe places her eggs, which are of an oblong ſhape, with great regularity, one by the other. They are of a bright yellow colour, and no way wrapped up in a common covering, as ſome have imagined. When the female is lightened of her burden, ſhe again aſcends from her hole, to live, as before, upon leaves and vegetables, to buzz in the ſummer evening, and to lie hid among the branches of trees in the heat of the day.

In about three months after theſe eggs have been thus depoſited in the earth, the contained inſect begins to break its ſhell, and a ſmall grub or maggot crawls forth, and feeds upon the roots of whatever vegetable it happens to be neareſt. All ſubſtances, of this kind, ſeem equally grateful; yet it is probable the mother inſect has a choice among what kind of vegetables ſhe ſhall depoſit her young. In this manner theſe voracious creatures continue in the worm ſtate for more than three years, devouring the roots of every plant they approach, and making their way under ground in queſt of food with great diſpatch and facility. At length they grow to above the ſize of a walnut, being a great thick white maggot with a red head, which is ſeen moſt frequently in new turned earth, and which is ſo eagerly ſought after by birds of every ſpecies. When largeſt, they are found an inch and a half long, of a whitiſh yellow colour; with a body conſiſting of twelve ſegments or joints, on each ſide of which there are nine breathing holes, and three red feet. The head is larger in proportion to the body, of a reddiſh colour, with a pincer before, and a ſemicircular lip, with which it cuts the roots of plants, and ſucks out their moiſture. As this inſect lives entirely under ground, it has no occaſion for Scarabæus. eyes, and accordingly it is found to have none; but is furniſhed with two feelers, which, like the crutch of a blind man, ſerve to direct its motions. Such is the form of this animal, that lives for years in the worm ſtate under ground, ſtill voracious, and every year changing its ſkin.

It is not till the end of the fourth year that this extraordinary inſect prepares to emerge from its ſubterraneous abode, and even this is not effected but by a tedious preparation. About the latter end of autumn, the grub begins to perceive the approaches of its transformation: it then buries itſelf deeper and deeper in the earth, ſometimes ſix feet beneath the ſurface; and there forms itſelf a capacious apartment, the walls of which it renders very ſmooth and ſhining by the exertions of its body. Its abode being thus formed, it begins ſoon after to ſhorten itſelf, to ſwell, and to burſt its laſt ſkin in order to aſſume the form of a chryſalis. This, in the beginning, appears of a yellowiſh colour, which heightens by degrees, till at laſt it is ſeen nearly red. Its exterior form plainly diſcovers all the veſtiges of the future winged inſect, all the fore parts being diſtinctly ſeen; while, behind, the animal ſeems as if wrapped in ſwaddling clothes.

The young may-bug continues in this ſtate for about three months longer; and it is not till the beginning of January that the aurelia diveſts itſelf of all its impediments, and becomes a winged inſect completely formed. Yet ſtill the animal is far from attaining its natural ſtrength, health, and appetite. It undergoes a kind of infant imbecility; and unlike moſt other inſects, that the inſtant they become flies are arrived at their ſtate of full perfection, the may-bug continues feeble and ſickly. Its colour is much brighter than in the perfect animal; all its parts are ſoft; and its voracious nature ſeems for a while to have entirely forſaken it. As the animal is very often found in this ſtate, it is ſuppoſed, by thoſe unacquainted with its real hiſtory, that the old ones, of the former ſeaſon, have buried themſelves for the winter, in order to reviſit the ſun the enſuing ſummer. But the fact is, the old one never ſurvives the ſeaſon; but dies, like all the other winged tribe of inſects, from the ſeverity of cold in winter.

About the latter end of May, theſe inſects, after having lived for four years under ground, burſt from the earth when the firſt mild evening invites them abroad. They are at that time ſeen riſing from their long impriſonment, from living only upon roots, and imbibing only the moiſture of the earth, to viſit the mildneſs of the ſummer air, to chooſe the ſweeteſt vegetables for their banquet, and to drink the dew of the evening. Wherever an attentive obſerver then walks abroad, he will ſee them burſting up before him in his pathway, like ghoſts on a theatre. He will ſee every part of the earth, that had its ſurface beaten into hardneſs, perforated by their egreſſion. When the ſeaſon is favourable for them, they are ſeen by myriads buzzing along, hitting againſt every object that intercepts their flight. The mid-day ſun, however, ſeems too powerful for their conſtitutions: they then lurk under the leaves and branches of ſome ſhady tree; but the willow ſeems particularly their moſt favourite food; there they lurk in cluſters, and ſeldom

quit

Scarabæus. quit the tree till they have devoured all its verdure. In thoſe ſeaſons which are favourable to their propagation, they are ſeen in an evening as thick as flakes of ſnow, and hitting againſt every object with a ſort of capricious blindneſs. Their duration, however, is but ſhort, as they never ſurvive the ſeaſon. They begin to join ſhortly after they have been let looſe from their priſon; and when the female is impregnated, ſhe cautiouſly bores a hole in the ground, with an inſtrument fitted for that purpoſe with which ſhe is furniſhed at the tail; and there depoſits her eggs, generally to the number of threeſcore. If the ſeaſon and the ſoil be adapted to their propagation, theſe ſoon multiply as already deſcribed, and go through the various ſtages of their contemptible exiſtence. This inſect, however, in its worm ſtate, though prejudicial to man, makes one of the chief repaſts of the feathered tribe, and is generally the firſt nouriſhment with which they ſupply their young. Hogs will root up the land for them, and at firſt eat them greedily; but ſeldom meddle with them a ſecond time. Rooks are particularly fond of theſe worms, and devour them in great numbers. The inhabitants of the county of Norfolk, ſome time ſince, went into the practice of deſtroying their rookeries; but in proportion as they deſtroyed one plague, they were peſtered with a greater; and theſe inſects multiplied in ſuch an amazing abundance, as to deſtroy not only the verdure of the fields, but even the roots of vegetables not yet ſhot forth. One farm in particular was ſo injured by them in the year 1751, that the occupier was not able to pay his rent; and the landlord was not only content to loſe his income for that year, but alſo gave money for the ſupport of the farmer and his family. In Ireland they ſuffered ſo much by theſe inſects, that they came to a reſolution of ſetting fire to a wood, of ſome extent, to prevent their miſchievous propagation.

Bath Papers, vol. i. p. 265.

"Neither the ſevereſt froſts in our climate (ſays Mr Rack), nor even keeping them in water, will kill them. I have kept ſome in water near a week; they appeared motionleſs; but on expoſing them to the ſun and air a few hours, they recovered, and were as lively as ever. Hence it is evident they can live without air. On examining them with a microſcope, I could never diſcover any organs for reſpiration, or perceive any pulſation. When numerous, they are not deſtroyed without great difficulty; the beſt method is, to plough up the land in thin furrows, and employ children to pick them up in baſkets; and then ſtrew ſalt and quick-lime, and harrow in. About 30 years ſince I remember many farmers crops in Norfolk were almoſt ruined by them in their grub-ſtate; and in the next ſeaſon, when they took wing, the trees and hedges in many pariſhes were ſtripped bare of their leaves as in winter. At firſt the people uſed to brush them down with poles, and then ſweep them up and burn them. One farmer made oath that he gathered 80 buſhels; but their number ſeemed not much leſſened, except juſt in his own fields."

The ſcarabæus carnifex, which the Americans call the *tumble-dung*, particularly demands our attention. It is all over of a duſky black, rounder than thoſe animals are generally found to be, and ſo ſtrong, though not much larger than the common black beetle, that if one of them be put under a braſs candleſtick, it will cauſe it to move backwards and forwards, as if it were by an inviſible hand, to the admiration of thoſe who are not accuſtomed to the ſight: but this ſtrength is given it for much more uſeful purpoſes than thoſe of exciting human curioſity; for there is no creature more laborious, either in ſeeking ſubſiſtence, or providing a proper retreat for its young. They are endowed with ſagacity to diſcover ſubſiſtence by their excellent ſmelling, which directs them in flights to excrements juſt fallen from man or beaſt, on which they inſtantly drop, and fall unanimouſly to work in forming round balls or pellets thereof, in the middle of which they lay an egg. Theſe pellets, in September, they convey three feet deep in the earth, where they lie till the approach of ſpring, when the eggs are hatched and burſt their nells, and the inſects find their way out of the earth. They aſſiſt each other with indefatigable induſtry in rolling theſe globular pellets to the place where they are to be buried. This they are to perform with the tail foremoſt, by raiſing up their hinder part, and ſhoving along the ball with their hind feet. They are always accompanied with other beetles of a larger ſize, and of a more elegant ſtructure and colour. The breaſt of this is covered with a ſhield of a crimſon colour, and ſhining like metal; the head is of the like colour, mixed with green; and on the crown of the head ſtands a ſhining black horn, bending backwards. Theſe are called the *kings of the beetles*; but for what reaſon is uncertain, ſince they partake of the ſame dirty drudgery with the reſt.

Scarabæus, Scarborough

The *elephant beetle* is the largeſt of this kind hitherto known; and is found in South America, particularly in Guiana and Surinam, as well as about the river Oroonoko. It is of a black colour; and the whole body is covered with a very hard ſhell, full as thick and as ſtrong as that of a ſmall crab. Its length, from the hinder part to the eyes, is almoſt four inches; and from the ſame part to the end of the proboſcis or trunk, four inches and three quarters. The tranſverſe diameter of the body is two inches and a quarter; and the breadth of each elytron, or caſe for the wings, is an inch and three-tenths. The antennæ or feelers are quite horny; for which reaſon the proboſcis or trunk is moveable at its inſertion into the head, and ſeems to ſupply the place of feelers; the horns are eight-tenths of an inch long, and terminate in points. The proboſcis is an inch and a quarter long, and turns upwards; making a crooked line, terminating in two horns, each of which is near a quarter of an inch long; but they are not perforated at the end like the proboſcis of other inſects. About four-tenths of an inch above the head, on that ſide next the body, is a prominence or ſmall horn; which, if the reſt of the trunk were away, would cauſe this part to reſemble the horn of a rhinoceros. There is indeed a beetle ſo called; but then the horn or trunk has no fork at the end, though the lower horn reſembles this. The feet are all forked at the end, but not like lobſters claws. See Plate CCCCXLIV.

SCARBOROUGH, a town of the North Riding of Yorkſhire, ſeated on a ſteep rock, near which are ſuch craggy cliffs that it is almoſt inacceſſible on every ſide. On the top of this rock is a large green plain, with two wells of freſh water ſpringing out of the rock. It has of late been greatly frequented on account of its mineral waters called the *Scarborough-Spa*; on which account it is much mended in the number and beauty of the buildings. The ſpring was under the cliff, part of which

Scarborough, Scardona.

which fell down in 1737, and the water was loſt; but in clearing away the ruins in order to rebuild the wharf, it was recovered, to the great joy of the town. The waters of Scarborough are chalybeate and purging. The two wells are both impregnated with the ſame principles, in different proportions; though the purging well is the moſt celebrated, and the water of this is uſually called the *Scarborough water*. When theſe waters are poured out of one glaſs into another, they throw up a number of air-bubbles; and if they are ſhaken for ſome time in a phial cloſe ſtopped, and the phial be ſuddenly opened before the commotion ceaſes, they diſplode an elaſtic vapour, with an audible noiſe, which ſhows that they abound in fixed air. At the fountain they have a briſk, pungent, chalybeate taſte; but the purging water taſtes bitteriſh, which is not uſually the caſe with the chalybeate one. They loſe their chalybeate virtues by expoſure and by keeping; but the purging water the ſooneſt. They both putrefy by keeping; but in time recover their ſweetneſs. Four or five half pints of the purging water drank within an hour, give two or three eaſy motions, and raiſe the ſpirits. The like quantity of the chalybeate purges leſs, but exhilarates more, and paſſes off chiefly by urine. Theſe waters have been found beneficial in hectic fevers, weakneſſes of the ſtomach, and indigeſtion; in relaxations of the ſyſtem; in nervous, hyſteric, and hypochondriacal diſorders; in the green ſickneſs, ſcurvy, rheumatiſm, and aſthmatic complaints; in gleets, the fluor albus, and other preternatural evacuations; and in habitual coſtiveneſs. Here are aſſemblies and balls in the ſame manner as at Tunbridge. It is a place of ſome trade, has a very good harbour, and ſends two members to parliament. E. Long. 0. 3. N. Lat. 54. 18.

SCARDONA, a ſea-port town of Dalmatia, ſeated on the eaſtern banks of the river Cherca, with a biſhop's ſee. It has been taken and retaken ſeveral times by the Turks and Venetians; and theſe laſt ruined the fortifications and its principal buildings in 1537; but they have been ſince put in a ſtate of defence.

Travels into Dalmatia.

"No veſtiges (ſays Fortis) now remain viſible of that ancient city, where the ſtates of Liburnia held their aſſembly in the times of the Romans. I however tranſcribed theſe two beautiful inſcriptions, which were diſcovered ſome years ago, and are preſerved in the houſe of the reverend Canon Mercati. It is to be hoped, that, as the population of Scardona continues increaſing, new lands will be broken up, and conſequently more frequent diſcoveries made of the precious monuments of antiquity. And it is to be wiſhed, that the few men of letters, who have a ſhare in the regulation of this reviving city, may beſtow ſome particular attention on that article, ſo that the honourable memorials of their ancient and illuſtrious country, which once held ſo eminent a rank among the Liburnian cities, may not be loſt, nor carried away. It is almoſt a ſhame, that only ſix legible inſcriptions actually exiſt at Scardona; and that all the others, ſince many more certainly muſt have been dug up there, are either miſerably broken, or loſt, or tranſported to Italy, where they loſe the greateſt part of their merit. Roman coins are very frequently found about Scardona, and ſeveral valuable ones were ſhown to me by that hoſpitable prelate Monſignor Treviſani, biſhop and father of the riſing ſettlement. One of the principal gentlemen of the place was ſo kind as to give me ſeveral ſepulchral lamps, which are marked by the name of *Fortis*, and by the elegant form of the letters appear to be of the beſt times. The repeated devaſtations to which Scardona has been expoſed, have left it no traces of grandeur. It is now, however, beginning to riſe again, and many merchants of Servia and Boſnia have ſettled there, on account of the convenient ſituation for trade with the upper provinces of Turkey. But the city has no fortifications, notwithſtanding the aſſertion of P. Farlati to the contrary." E. Long. 17. 25. N. Lat. 43. 55.

Scarification ‖ Scarron.

SCARIFICATION, in ſurgery, the operation of making ſeveral inciſions in the ſkin by means of lancets or other inſtruments, particularly the cupping inſtrument. See SURGERY.

SCARLET, a beautiful bright red colour.

In painting in water-colours, minium mixed with a little vermilion produces a good ſcarlet: but if a flower in a print is to be painted a ſcarlet colour, the lights as well as the ſhades ſhould be covered with minium, and the ſhaded parts finiſhed with carmine, which will produce an admirable ſcarlet.

Scarlet-Fever. See MEDICINE, n° 230.

SCARP, in fortification, is the interior talus or ſlope of the ditch next the place, at the foot of the rampart.

SCARP, in heraldry, the ſcarf which military commanders wear for ornament. It is borne ſomewhat like a battoon ſiniſter, but is broader than it, and is continued out to the edges of the field, whereas the battoon is cut off at each end.

SCARPANTO, an iſland of the Archipelago, and one of the Sporades, lying to the ſouth-weſt of the iſle of Rhodes, and to the north-eaſt of that of Candia. It is about 22 miles in length and 8 in breadth; and there are ſeveral high mountains. It abounds in cattle and game; and there are mines of iron, quarries of marble, with ſeveral good harbours. The Turks are maſters of it, but the inhabitants are Greeks.

SCARPE, a river of the Netherlands, which has its ſource near Aubigny in Artois, where it waſhes Arras and Douay; after which it runs on the confines of Flanders and Hainault, paſſing by St Amand, and a little after falls into the Scheldt.

SCARRON (Paul), a famous burleſque writer, was the ſon of a counſellor in parliament, and was born at Paris about the end of the year 1610, or in the beginning of the ſucceeding year. His father marrying a ſecond time, he was compelled to aſſume the eccleſiaſtical profeſſion. At the age of 24 he viſited Italy, where he freely indulged in licentious pleaſures. After his return to Paris he perſiſted in a life of diſſipation till a long and painful diſeaſe convinced him that his conſtitution was almoſt worn out. At length when engaged in a party of pleaſure at the age of 27, he loſt *the uſe of the ſe legs which danced ſo gracefully, and of thoſe hands which could paint and play on the lute with ſo much elegance.* In the year 1638 he was attending the carnival at Mens, of which he was a canon. Having dreſſed himſelf one day as a ſavage, his ſingular appearance excited the curioſity of the children of the town. They followed him in multitudes, and he was obliged to take ſhelter in a marſh. This wet and cold ſituation produced a numbneſs which totally deprived him of the uſe of his limbs; but notwithſtanding this misfortune he continued gay and cheerful. He took up his reſidence at Paris,

Scarron. Paris, and by his pleaſant humour ſoon attracted to his houſe all the men of wit about the city. The loſs of his health was followed by the loſs of his fortune. On the death of his father he entered into a proceſs with his mother-in-law. He pleaded the cauſe in a ludicrous manner, though his whole fortune depended on the deciſion. He accordingly loſt the cauſe. Mademoiſelle de Hautefort, compaſſionating his misfortunes, procured for him an audience of the queen. The poet requeſted to have the title of *Valetudinarian* to her majeſty. The queen ſmiled, and Scarron conſidered the ſmile as the commiſſion to his new office. He therefore aſſumed the title of *Scarron, by the grace of God, unworthy valetudinarian to the queen.*

Cardinal Mazarine gave him a penſion of 500 crowns; but that miniſter having received diſdainfully the dedication of his *Typhon*, the poet immediately wrote a *Mazarinade*, and the penſion was withdrawn. He then attached himſelf to the prince of Condé, and celebrated his victories. He at length formed the extraordinary reſolution of marrying, and was accordingly, in 1651, married to Mademoiſelle d'Aubigné (afterwards the famous Madam de Maintenon), who was then only 16 years of age. "At that time (ſays Voltaire) it was conſidered as a great acquiſition for her to gain for a huſband a man who was diſfigured by nature, impotent, and very little enriched by fortune." When Scarron was queſtioned about the contract of marriage, he ſaid he acknowledged to the bride two large invincible eyes, a very beautiful ſhape, two fine hands, and a large portion of wit. The notary demanded what dowry he would give her? Immediately replied Scarron, "The names of the wives of kings die with them, but the name of Scarron's wife ſhall live for ever." She reſtrained by her modeſty his indecent buffooneries, and the good company which had formerly reſorted to his houſe were not leſs frequent in their viſits. Scarron now became a new man. He became more decent in his manners and converſation: and his gaiety, when tempered with moderation, was ſtill more agreeable. But, in the mean time, he lived with ſo little economy, that his income was ſoon reduced to a ſmall annuity and his marquiſate of Quinet. By the marquiſate of Quinet, he meant the revenue he derived from his publications, which were printed by one Quinet. He was accuſtomed to talk to his ſuperiors with great freedom in his jocular ſtyle. In the dedication to his *Don Japhet d'Armenie*, he thus addreſſes the king. "I ſhall endeavour to perſuade your majeſty, that you would do yourſelf no injury were you to do me a ſmall favour; for in that caſe I ſhould become more gay: if I ſhould become more gay, I ſhould write ſprightly comedies: and if I ſhould write ſprightly comedies, your majeſty would be amuſed, and thus your money would not be loſt. All this appears ſo evident, that I ſhould certainly be convinced of it if I were as great a king as I am now a poor unfortunate man."

Though Scarron wrote comedies, he had neither time nor patience to ſtudy the rules and models of dramatic poetry. Ariſtotle and Horace, Plautus and Terence, would have frightened him; and perhaps he did not know that there was ever ſuch a perſon as Ariſtophanes. He ſaw an open path before him, and he followed it. It was the faſhion of the times to pillage the Spaniſh writers. Scarron was acquainted with that language, and he found it eaſier to uſe the materials which were already prepared, than to rack his brain in inventing a ſubject; a reſtraint to which a genius like his could not eaſily ſubmit. As he borrowed liberally from the Spaniſh writers, a dramatic piece did not coſt him much labour. His labour conſiſted not in making his comic characters talk humorouſly, but in keeping up ſerious characters; for the ſerious was a foreign language to him. The great ſucceſs of his *Jodelet Maitre* was a vaſt allurement to him. The comedians who acted it eagerly requeſted more of his productions. They were written without much toil, and they procured him large ſums. They ſerved to amuſe him. If it be neceſſary to give more reaſons for Scarron's readineſs to engage in theſe works, abundance may be had. He dedicated his books to his ſiſter's greyhound bitch; and when ſhe failed him, he dedicated them to a certain Monſeigneur, whom he praiſed higher, but did not much eſteem. When the office of hiſtoriographer became vacant, he ſolicited for it without ſucceſs. At length Fouquet gave him a penſion of 1600 livres. Chriſtina queen of Sweden having come to Paris, was anxious to ſee Scarron. "I permit you (ſaid ſhe to Scarron) to fall in love with me. The queen of France has made you her valetudinarian, and I create you my *Roland*." Scarron did not long enjoy that title: he was ſeized with ſo violent a hiccough, that every perſon thought he would have expired. "If I recover (he ſaid), I will make a fine ſatire on the hiccough." His gaiety did not forſake him to the laſt. Within a few minutes of his death, when his domeſtics were ſhedding tears about him, "My good friends (ſaid he), I ſhall never make you weep ſo much for me as I have made you laugh." Juſt before expiring, he ſaid, "I could never believe before that it is ſo eaſy to laugh at death." He died on the 14th of October 1660, in the 51ſt year of his age. Scarron.

His works have been collected and publiſhed by Bruzen de la Martiniere, in 10 vols 12mo, 1737. There are, 1. The Eneid traveſtied, in 8 books. It was afterwards continued by Moreau de Braſey. 2. Typhon, or the Gigantomachia. 3. Many comedies; as, Jodelet, or the Maſter Valet; Jodelet cuffed; Don Japhet d'Armenie; The Ridiculous Heir; Every Man his own Guardian; The Foolish Marquis; The Scholar of Salamanca; The Falſe Appearance; The Prince Corſaire, a tragi-comedy. Beſides theſe, he wrote other pieces in verſe. 4. His Comic Romance in proſe, which is the only one of his works that deſerves attention. It is written with much purity and gaiety, and has contributed not a little to the improvement of the French language. Scarron had great pleaſure in reading his works to his friends as he compoſed them: he called it trying his works. Segrais and another of his friends coming to him one day, "Take a chair (ſays Scarron to them) and ſit down, that I may examine my Comic Romance." When he obſerved the company laugh, "Very well (ſaid he), my book will be well received ſince it makes perſons of ſuch delicate taſte laugh." Nor was he deceived. His Romance had a prodigious run. It was the only one of his works that Boileau could ſubmit to read. 5. Spaniſh novels tranſlated into French. 6. A volume of Letters. 7. Poems; conſiſting of Songs, Epiſtles, Stanzas, Odes, and Epigrams. The whole collection abounds with ſprightlineſs and gaiety. Scarron can

Scene, Scenography.

can raiſe a laugh in the moſt ſerious ſubjects; but his ſalliès are rather thoſe of a buffoon than the effuſions of ingenuity and taſte. He is continually falling into the mean and the obſcene. If we ſhould make any exception in favour of ſome of his comedies, or ſome paſſages in his Eneid traveſtied, and his Comic Romance, we muſt acknowledge that all the reſt of his works are only fit to be read by footmen and buffoons. It has been ſaid that he was the moſt eminent man in his age for burleſque. This might make him an agreeable companion to thoſe who choſe to laugh away their time; but as he has left nothing that can inſtruct poſterity, he has but little title to poſthumous fame.

SCENE, in its primary ſenſe, denoted a theatre, or the place where dramatic pieces and other public ſhows were exhibited; for it does not appear that the ancient poets were at all acquainted with the modern way of changing the ſcenes in the different parts of the play, in order to raiſe the idea of the perſons repreſented by the actors being in different places.

The original ſcene for acting of plays was as ſimple as the repreſentations themſelves: it conſiſted only of a plain plot of ground proper for the occaſion, which was in ſome degree ſhaded by the neighbouring trees, whoſe branches were made to meet together, and their vacancies ſupplied with boards, ſticks, and the like; and to complete the ſhelter, theſe were ſometimes covered with ſkins, and ſometimes with only the branches of other trees newly cut down, and full of leaves. Afterwards more artificial ſcenes, or ſcenical repreſentations, were introduced, and paintings uſed inſtead of the objects themſelves. Scenes were then of three ſorts; tragic, comic, and ſatyric. The tragic ſcene repreſented ſtately magnificent edifices, with decorations of pillars, ſtatues, and other things ſuitable to the palaces of kings: the comic exhibited private houſes with balconies and windows, in imitation of common buildings: and the ſatyric was the repreſentation of groves, mountains, dens, and other rural appearances; and theſe decorations either turned on pivots, or ſlid along grooves, as thoſe in our theatres.

To keep cloſe to nature and probability, the ſcene ſhould never be ſhifted from place to place in the courſe of the play: the ancients were pretty ſevere in this reſpect, particularly Terence, in ſome of whoſe plays the ſcene never ſhifts at all, but the whole is tranſacted at the door of ſome old man's houſe, whither with inimitable art he occaſionally brings the actors. The French are pretty ſtrict with reſpect to this rule; but the Engliſh pay very little regard to it.

Scene is alſo a part or diviſion of a dramatic poem. Thus plays are divided into acts, and acts are again ſubdivided into ſcenes; in which ſenſe the ſcene is properly the perſons preſent at or concerned in the action on the ſtage at ſuch a time; whenever, therefore, a new actor appears, or an old one diſappears, the action is changed into other hands; and therefore a new ſcene then commences.

It is one of the laws of the ſtage, that the ſcenes be well connected; that is, that one ſucceed another in ſuch a manner as that the ſtage be never quite empty till the end of the act. See Poetry.

SCENOGRAPHY, (from the Greek, σκηνη *ſcene*, and γραφη *deſcription*), in perſpective, a repreſentation of a body on a perſpective plane; or a deſcription thereof in all its dimenſions ſuch as it appears to the eye. See Perspective. Sceptic.

SCEPTIC, σκεπτικος, from σκεπτομαι, "I conſider, look about, or deliberate," properly ſignifies *conſiderative* and *inquiſitive*, or one who is always weighing reaſons on one ſide, and the other without ever deciding between them. It is chiefly applied to an ancient ſect of philoſophers founded by Pyrrho (ſee Pyrrho), who, according to Laertius, had various other denominations. From their matter they were called *Pyrrhonians*; from the diſtinguiſhing tenets or characteriſtic of their philoſophy they derived the name of *Aporetici*, from απορεω, "to doubt;" from their ſuſpenſion and heſitation they were called *ephectici*, from εφεχειν, "to ſtay or keep back;" and laſtly, they were called *zetitici* or *ſeekers*, from their never getting beyond the ſearch of truth.

That the ſceptical philoſophy is abſurd, can admit of no diſpute in the preſent age; and that many of the followers of Pyrrho carried it to the moſt ridiculous height, is no leſs true. But we cannot believe that he himſelf was ſo extravagantly ſceptical as has ſometimes been aſſerted, when we reflect on the particulars of his life, which are ſtill preſerved, and the reſpectful manner in which we find him mentioned by his contemporaries and writers of the firſt name who flouriſhed ſoon after him. The truth, as far as at this diſtance of time it can be diſcovered, ſeems to be, that he learned from Democritus to deny the real exiſtence of all qualities in bodies, except thoſe which are eſſential to primary atoms, and that he referred every thing elſe to the perceptions of the mind produced by external objects, in other words, to appearance and opinion. All knowledge of courſe appeared to him to depend on the fallacious report of the ſenſes, and conſequently to be uncertain; and in this notion he was confirmed by the general ſpirit of the Eleatic ſchool in which he was educated. He was further confirmed in his ſcepticiſm by the ſubtilties of the Dialectic ſchools, in which he had been inſtructed by the ſon of Stilpo; chooſing to overturn the cavils of ſophiſtry by recurring to the doctrine of univerſal uncertainty, and thus breaking the knot which he could not unlooſe. For being naturally and habitually inclined to conſider immoveable tranquility as the great end of all philoſophy, he was eaſily led to deſpiſe the diſſenſions of the dogmatiſts, and to infer from their endleſs diſputes, the uncertainty of the queſtions on which they debated; controverſy, as it has often happened to others, becoming alſo with reſpect to him the parent of ſcepticiſm.

Pyrrho's doctrines, however new and extraordinary, were not totally diſregarded. He was attended by ſeveral ſcholars, and ſucceeded by ſeveral followers, who preſerved the memory of his notions. The moſt eminent of his followers was Timon (See Timon), in whom the public ſucceſſion of profeſſors in the Pyrrhonic ſchool terminated. In the time of Cicero it was almoſt extinct, having ſuffered much from the jealouſy of the dogmatiſts, and from a natural averſion in the human mind to acknowledge total ignorance, or to be left in abſolute darkneſs. The diſciples of Timon, however, ſtill continued to profeſs ſcepticiſm, and their notions were embraced privately at leaſt by many others. The ſchool itſelf was afterwards revived by Ptolæmeus a Cyrenian, and was continued by Æneſidemus a contemporary of Cicero, who wrote a treatiſe on the principles of the Pyrrhonic philoſophy, the heads of which are preſerved by Photius.

Sceptic. Photius. From this time it was continued through a series of preceptors of little note to Sextus Empiricus, who alſo gave a ſummary of the ſceptical doctrine.

A ſyſtem of philoſophy thus founded on doubt, and clouded with uncertainty, could neither teach tenets of any importance, nor preſcribe a certain rule of conduct; and accordingly we find that the followers of ſcepticiſm were guided entirely by chance. As they could form no certain judgment reſpecting good and evil, they accidentally learned the folly of eagerly purſuing any apparent good, or of avoiding any apparent evil; and their minds of courſe ſettled into a ſtate of undiſturbed tranquillity, the grand poſtulatum of their ſyſtem.

In the ſchools of the ſceptics we find ten diſtinct topics of argument urged in ſupport of the doctrine of uncertainty, with this precaution, however, that nothing could be poſitively aſſerted either concerning their number or their force. Theſe arguments chiefly reſpect objects of ſenſe: they place all knowledge in appearance; and, as the ſame things appear very different to different people, it is impoſſible to ſay which appearance moſt truly expreſſes their real nature. They likewiſe ſay, that our judgment is liable to uncertainty from the circumſtance of frequent or rare occurrence, and that mankind are continually led into different conceptions concerning the ſame thing by means of cuſtom, law, fabulous tales, and eſtabliſhed opinions. On all theſe accounts they think every human judgment is liable to uncertainty; and concerning any thing they can only aſſert, that it ſeems to be, not that it is what it ſeems.

This doubtful reaſoning, if reaſoning it may be called, the ſceptics extended to all the ſciences in which they diſcovered nothing true, or which could be abſolutely aſſerted. In all nature, in phyſics, morals, and theology, they found contradictory opinions, and inexplicable or incomprehenſible phenomena. In phyſics, the appearances they thought might be deceitful; and reſpecting the nature of God and the duties of morality, men were, in their opinion, equally ignorant and uncertain. To overturn the ſophiſtical arguments of theſe ſceptical reaſoners would be no difficult matter, if their reaſoning were worthy of confutation. Indeed, their great principle is ſufficiently, though ſhortly, refuted by Plato, in theſe words. "When you ſay all things are incomprehenſible (ſays he), do you comprehend or conceive that they are thus incomprehenſible, or do you not? If you do, then ſomething is comprehenſible; if you do not, there is no reaſon we ſhould believe you, ſince you do not comprehend your own aſſertion."

But ſcepticiſm has not been confined entirely to the ancients and to the followers of Pyrrho. Numerous ſceptics have ariſen alſo in modern times, varying in their principles, manners, and character, as chance, prejudice, vanity, weakneſs, or indolence, prompted them. The great object, however, which they ſeem to have in view, is to overturn, or at leaſt to weaken, the evidence of analogy, experience, and teſtimony; though ſome of them have even attempted to ſhow, that the axioms of geometry are uncertain, and its demonſtrations inconcluſive. This laſt attempt has not indeed been often made; but the chief aim of Mr Hume's philoſophical writings is to introduce doubts into every branch of *phyſics*, *metaphyſics*, *hiſtory*, *ethics*, and *theology*. It is needleſs to give a ſpecimen of his reaſonings in ſupport of modern ſcepticiſm. The moſt important of them have been noticed elſewhere (ſee MIRACLE, METAPHYSICS, and PHILOSOPHY, n° 41.); and ſuch of our readers as have any reliſh for ſpeculations of that nature can be no ſtrangers to his Eſſays, or to the able confutations of them by the Doctors Reid, Campbell, Gregory, and Beattie, who have likewiſe expoſed the weakneſs of the ſceptical reaſonings of Des Cartes, Malbranche, and other philoſophers of great fame in the ſame ſchool. Scepticiſm ‖ Schaffhauſen

SCEPTICISM, the doctrines and opinions of the ſceptics. See the preceding article.

SCEPTRE, a kind of royal ſtaff, or batoon, borne on ſolemn occaſions by kings, as a badge of their command and authority. Nicod derives the word from the Greek σκηπτρον, which he ſays originally ſignified "a javelin," which the ancient kings uſually bore as a badge of their authority; that inſtrument being in very great veneration among the heathens. But σκηπτρον does not properly ſignify a javelin, but *a ſtaff to reſt upon*, from σκηπτω, *innitor*, "I lean upon." Accordingly, in the ſimplicity of the earlier ages of the world, the ſceptres of kings were no other than long walking-ſtaves: and Ovid, in ſpeaking of Jupiter, deſcribes him as reſting on his ſceptre (Met. i. v. 178.) The ſceptre is an enſign of royalty of greater antiquity than the crown. The Greek tragic and other poets put ſceptres in the hands of the moſt ancient kings they ever introduce. Juſtin obſerves, that the ſceptre, in its original, was an *haſta*, or ſpear. He adds, that, in the moſt remote antiquity, men adored the *haſtæ* or ſceptres as immortal gods; and that it was upon this account, that, even in his time, they ſtill furniſhed the gods with ſceptres.—Neptune's ſceptre is his trident. Tarquin the Elder was the firſt who aſſumed the ſceptre among the Romans. Le Gendre tells us, that, in the firſt race of the French kings, the ſceptre was a golden rod, almoſt always of the ſame height with the king who bore it, and crooked at one end like a crozier. Frequently inſtead of a ſceptre, kings are ſeen on medals with a palm in their hand. See REGALIA.

SCHÆFFERA, in botany: A genus of the tetrandria order, belonging to the dioecia claſs of plants; and in the natural method ranking with thoſe that are doubtful. The calyx is quadripetalous; the corolla is quadripetalous, quinquepetalous, and often wanting; the fruit is a bilocular berry with one ſeed. Of this there are two ſpecies, both natives of Jamaica; and grow in the lowlands near the ſea: viz. 1. The *Completa*. 2. *Lateriflora*.

SCHAFFHAUSEN, a large, handſome, and ſtrong town of Switzerland, capital of a canton of the ſame name, with a caſtle in the form of a citadel. It is well built, with fine large ſtreets, and adorned with ſeveral foundations; and the greateſt part of the houſes are painted on the outſide. It is well fortified, and the cathedral is the largeſt church in Switzerland; beſides which, the miniſter, with the monaſtery adjoining thereto, the arſenal, the town houſe, the great clock (which ſhows the courſe of the ſun and moon with their eclipſes), and the ſtone bridge over the Rhine, are well worth the obſervation of a traveller. That river is of great conſequence to the inhabitants with regard to trade. E. Long. 8. 51. N. Lat. 47. 39.

The Canton of Schaffhauſen, in Switzerland, is bounded on the north and weſt by Suabia; on the eaſt by the canton of Zurich, and the biſhoprick of Conſtance;

Schedule, Scheele.

ſtance; and on the ſouth by the ſame, and by Thurgaw. It is 22 miles in length, and 10 in breadth; but produces all the neceſſaries of life, as wine, fiſh, wood, flax, horſes, ſheep, wool, black cattle, and deer. The principal town is of the ſame name.

SCHEDULE, a ſcroll of paper or parchment, annexed to a will, leaſe, or other deed; containing an inventory of goods, or ſome other matter omitted in the body of the deed.—The word is a diminutive of the Latin *ſcheda*, or Greek σχίδη, a leaf or piece of paper.

SCHEELE (Charles-William), was born on the 19th of December 1742, at Stralſund, where his father kept a ſhop. When he was very young, he received the uſual inſtructions of a private ſchool; and was afterwards advanced to an academy. At a very early age he ſhowed a ſtrong deſire to follow the profeſſion of an apothecary, and his father ſuffered him to gratify his inclinations. With Mr Bauch, an apothecary at Gottenburgh, he paſſed his apprenticeſhip, which was completed in ſix years. He remained, however, ſome time longer at that place, and it was there that he ſo excellently laid the firſt foundations of his knowledge. Among the various books which he read, that treated of chemical ſubjects, Kunckel's Laboratory ſeems to have been his favourite. He uſed to repeat many of the experiments contained in that work privately in the night, when the reſt of the family had retired to reſt. A friend of Scheele's had remarked the progreſs which he had made in chemiſtry, and had aſked him by what inducements he had been at firſt led to ſtudy a ſcience in which he had gained ſuch knowledge? Scheele returned the following anſwer: "The firſt cauſe, my friend, aroſe from yourſelf. Nearly at the beginning of my apprenticeſhip you adviſed me to read Neuman's Chemiſtry; from the peruſal of which I became eager to make experiments myſelf; and I remember very well how I mixed together, in a conſerve-glaſs, oil of cloves and fuming acid of nitre, which immediately took fire. I ſee alſo ſtill before my eyes an unlucky experiment which I made with pyrophorus. Circumſtances of this kind did but the more inflame my deſire to repeat experiments." After Scheele's departure from Gottenburg, in the year 1765, he obtained a place with Kalſtrom, an apothecary at Malmo. Two years afterwards he went from thence to Stockholm, and managed there the ſhop of Mr Scharenberg. In 1773, he changed this appointment for another at Upſal, under Mr Loock. Here he was fortunately ſituated; as, from his acquaintance with learned men, and from having free acceſs to the Univerſity Laboratory, he had opportunities of increaſing his knowledge. At this place alſo he happily commenced the friendſhip which ſubſiſted between him and Bergman. During his reſidence at this place, his Royal Highneſs Prince Henry of Pruſſia, accompanied by the Duke of Sunderland, viſited Upſal, and choſe this opportunity to ſee the Academical Laboratory. Scheele was accordingly appointed by the Univerſity to exhibit ſome chemical experiments to them. This office he undertook, and ſhewed ſome of the moſt curious proceſſes in chemiſtry. The two Princes aſked him many queſtions, and expreſſed their approbation of the anſwers which he returned to them. The Duke aſked him what countryman he was, and ſeemed to be much pleaſed when Scheele informed him that he was born at Stralſund. At their departure they told the profeſſor, who was preſent, that they ſhould eſteem it a favour if he would permit the young man to have free acceſs to the Laboratory, as often as he choſe, to make experiments. Scheele.

In the year 1777 Scheele was appointed by the Medical College to be apothecary at Koping. It was at that place that he ſoon ſhowed the world how great a man he was, and that no place or ſituation could confine his abilities. When he was at Stockholm he ſhewed his acuteneſs as a chemiſt, as he diſcovered there the new and wonderful acid contained in the ſparry fluor. It has been confidently aſſerted, that Scheele was the firſt who diſcovered the nature of the aerial acid; and that whilſt he was at Upſal he made many experiments to prove its properties. This circumſtance might probably have furniſhed Bergman with the means of handling this ſubject more fully. At the ſame place he began the ſeries of excellent experiments on that remarkable mineral ſubſtance, manganeſe; from which inveſtigation he was led to make the very valuable and intereſting diſcovery of the dephlogiſticated marine acid. At the ſame time he firſt obſerved the ponderous earth.

At Koping he finiſhed his diſſertation on Air and Fire; a work which the celebrated Bergman moſt warmly recommended in the friendly preface which he wrote for it. The theory which Scheele endeavours to prove in this treatiſe is, that fire conſiſts of pure air and phlogiſton. According to more recent opinions (if inflammable air be phlogiſton), water is compoſed of theſe two principles. Of theſe opinions we may ſay, in the words of Cicero, "*Opiniones tam variæ ſunt, tamque inter ſe diſſidentes, ut alterum profectò fieri poteſt, ut earum nulla, alterum certe non poteſt ut plus una, vera ſit.*" The author's merit in this work, excluſive of the encomiums of Bergman, was ſufficient to obtain the approbation of the public; as the ingenuity diſplayed in handling ſo delicate a ſubject, and the many new and valuable obſervations (A) which are diſperſed through the treatiſe, juſtly entitled the author to that fame which his book procured him. It was ſpread abroad through every country, became ſoon out of print, was reprinted, and tranſlated into many languages. The Engliſh tranſlation is enriched with the notes of that accurate and truly philoſophic genius Richard Kirwan, Eſq.

Scheele now diligently employed himſelf in contributing to the Tranſactions of the Academy at Stockholm. He firſt pointed out a new way to prepare the ſalt of benzoin. In the ſame year he diſcovered that arſenic, freed in a particular manner from phlogiſton, partakes of all the properties of an acid, and has its peculiar affinities to other ſubſtances.

In

(A) Scheele mentions in this work, in a curſory way, the decompoſition of common ſalt by the calx of lead. Mr Turner, a gentleman who happily unites the ſkill of the manufacturer with the knowledge of the philoſophic chemiſt, has alſo all the merit of this diſcovery, as he obſerved the ſame fact, without having been indebted to Scheele's hint on this ſubject. Mr Turner has done more; he has converted this diſcovery to ſome uſe in the arts; he produces mineral alkali for ſale, ariſing from this decompoſition; and from the lead which is united to the marine acid he forms the beautiful pigment called the *patent yellow*

Scheele. In a Diſſertation on Flint, Clay, and Alum, he clearly overturned Beaumé's opinion of the identity of the ſiliceous and argillaceous earths. He publiſhed an Analyſis of the Human Calculus. He ſhewed alſo a mode of preparing mercurius dulcis in the humid way, and improved the proceſs of making the powder of Algaroth. He analyſed the mineral ſubſtance called *molybdena*, or flexible black lead. He diſcovered a beautiful green pigment. He ſhowed us how to decompoſe the air of the atmoſphere. He diſcovered that ſome neutral ſalts are decompoſed by lime and iron. He decompoſed plumbago, or the common black lead. He obſerved, with peculiar ingenuity, an acid in milk, which decompoſes acetated alkali; and in his experiments on the ſugar of milk, he diſcovered another acid, different in ſome reſpects from the abovementioned acid and the common acid of ſugar. He accompliſhed the decompoſition of tungſtein, the component parts of which were before unknown, and found in it a peculiar acid earth united to lime. He publiſhed an excellent diſſertation on the different ſorts of æther. He found out an eaſy way to preſerve vinegar for many years. His inveſtigation of the colouring matter in Pruſſian blue, the means he employed to ſeparate it, and his diſcovery that alkali, ſal ammoniac, and charcoal, mixed together, will produce it, are ſtrong marks of his penetration and genius. He found out a peculiar ſweet matter in expreſſed oils, after they have been boiled with litharge and water. He ſhewed how the acid of lemons may be obtained in cryſtals. He found the white powder in rhubarb, which Model thought to be ſelenite, and which amounts to one-ſeventh of the weight of the root, to be calcareous earth, united to the acid of ſorrel. This ſuggeſted to him the examination of the acid of ſorrel. He precipitated acetated lead with it, and decompoſed the precipitate thus obtained by the vitriolic acid, and by this proceſs he obtained the common acid of ſugar; and by ſlowly dropping a ſolution of fixed alkali into a ſolution of the acid of ſugar, he regenerated the acid of ſorrel.—From his examination of the acids contained in fruits and berries, he found not one ſpecies of acid alone, viz. the acid of lemon, but another alſo, which he denominated the malaceous acid, from its being found in the greateſt quantity in apples.

By the decompoſition of Bergman's new metal (ſiderite) he ſhewed the truth of Meyer's and Klaproth's conjecture concerning it. He boiled the calx of ſiderite with alkali of tartar, and precipitated nitrated mercury by the middle ſalt which he obtained by this operation; the calx of mercury which was precipitated was found to be united to the acid of phoſphorus; ſo that he demonſtrates that this calx was phoſphorated iron. He found alſo, that the native Pruſſian blue contained the ſame acid. He diſcovered by the ſame means, that the perlate acid, as it was called, was not an acid *ſui generis*, but the phoſphoric united to a ſmall quantity of the mineral alkali. He ſuggeſted an improvement in the proceſs of obtaining magneſia from Epſom ſalt; he adviſes the adding of an equal weight of common ſalt to the Epſom ſalt, ſo that an equal weight of Glauber's ſalt may be obtained: but this will not ſucceed unleſs in the cold of winter. Theſe are the valuable diſcoveries of this great philoſopher, which are to be found in the Tranſactions of the Royal Society at Stockholm. Moſt of his eſſays have been publiſhed in French by Madame Picardet, and Monſ. Morveau of Dijon. Dr Beddoes has alſo made a very valuable preſent to his countrymen of an Engliſh tranſlation of a greater part of Scheele's diſſertations, to which he had added ſome uſeful and ingenious notes. The following diſcoveries of Scheele are not, we believe, publiſhed with the reſt. He ſhewed what that ſubſtance is, which has been generally called 'the earth of the fluor ſpar.' It is not produced unleſs the fluor acid meet with ſiliceous earth. It appears from Scheele's experiments to be a triple ſalt, conſiſting of flint, acid of fluor, and fixed alkali. Scheele proved alſo, that the fluor acid may be produced without any addition of the vitriolic or any mineral acid: the fluor is melted with fixed alkali, and the fluorated alkali is decompoſed by acetated lead. If the precipitate be mixed with charcoal duſt, and expoſed in a retort to a ſtrong heat, the lead will be revived, and the acid of fluor, which was united to it, will paſs into the receiver poſſeſſed of all its uſual properties. This ſeems to be an ingenious and unanſwerable proof of its exiſtence.

He obſerved, that no pyrophorus can be made unleſs an alkali be preſent; and the reaſon why it can be prepared from alum and coal is, that the common alum always contains a little alkali, which is added in order to make it cryſtallize; for if this be ſeparated from it, no pyrophorus can be procured from it. His laſt diſſertation was his very valuable obſervations on the acid of the gallnut. Ehrhart, one of Scheele's moſt intimate friends, aſſerts, that he was the diſcoverer of both of the acids of ſugar and tartar. We are alſo indebted to him for that maſterpiece of chemical decompoſition, the ſeparation of the acid of phoſphorus from bones. This appears from a letter which Scheele wrote to Gahn, who has generally had the reputation of this great diſcovery. This acid, which is ſo curious in the eye of the chemiſt, begins to draw the attention of the phyſician. It was firſt uſed in medicine, united to the mineral alkali, by the ingenious Dr Pearſon. The value of this addition to the materia medica cannot be better evinced than from the increaſe of the demand for it, and the quantity of it which is now prepared and ſold in London.

We may ſtamp the character of Scheele as a philoſopher from his many and important diſcoveries. What concerns him as a man we are informed of by his friends, who affirm, that his moral character was irreproachable.

On the 19th of May 1786, he was confined to his bed; on the 21ſt he bequeathed all of which he was poſſeſſed to his wife (who was the widow of his predeceſſor at Koping, and whom he had lately married); and on the ſame day he departed this life. So the world loſt, in leſs than two years, Bergman and Scheele, of whom Sweden may juſtly boaſt; two philoſophers, who were beloved and lamented by all their contemporaries, and whoſe memory poſterity will never ceaſe moſt gratefully to revere.

Scheele, Scheiner.

SCHEINER (Chriſtopher), a German mathematician aſtronomer, and Jeſuit, eminent for being the firſt who diſcovered ſpots on the ſun, was born at Schwaben in the territory of Middleheim in 1575. He firſt diſcovered ſpots on the ſun's diſk in 1611, and made obſervations on theſe phenomena at Rome, until at length reducing them to order, he publiſhed them in one vol. folio in 1630. He wrote alſo ſome ſmaller things

Scheld relating to mathematics and philoſophy; and died in 1690.

SCHELD, a river which riſes on the confines of Picardy, and runs north eaſt by Cambray, Valenciennes, Tournay, Oudenarde, &c. and receiving the Lis at Ghent, runs eaſt by Dendermond, and then north to Antwerp: below which city it divides into two branches, one called *the Weſter-Scheld*, which ſeparates Flanders from Zealand, and diſcharges itſelf into the ſea near Fluſhing; and the other called *the Oſter Scheld*, which runs by Bergen-op-zoom, and afterwards between the iſlands Beveland and Schowen, and a little below falls into the ſea.

SCHEMNITZ, a town of Upper Hungary, with three caſtles. It is famous for mines of ſilver and other metals, as alſo for hot baths. Near it is a rock of a ſhining blue colour mixed with green, and ſome ſpots of yellow. E. Long. 19. 0. N. Lat. 48. 40.

SCHERARDIA, in botany; a genus of the monogynia order, belonging to the tetrandria claſs of plants. The corolla is monopetalous and funnel-ſhaped; there are two three-toothed ſeeds.

SCHETLAND. See SHETLAND.

SCHEUCHZERIA, in botany: A genus of the trigynia order, belonging to the hexandria claſs of plants; and in the natural method ranking under the fifth order, *Tripetaloidæ*. The calyx is ſexpartite; there is no corolla, nor are there any ſtyles; there are three inflated and monoſpermous capſules.

SCHIECHS, or SCHECH, among the Arabs, is a name applied to their nobles. "Among the Bedouins," ſays Niebuhr, "it belongs to every noble, whether of the higheſt or the loweſt order. Their nobles are very numerous, and compoſe in a manner the whole nation; the plebeians are invariably actuated and guided by the ſchiechs, who ſuperintend and direct in every tranſaction. The ſchiechs, and their ſubjects, are born to the life of ſhepherds and ſoldiers. The greater tribes rear many camels, which they either ſell to their neighbours, or employ them in the carriage of goods, or in military expeditions. The petty tribes keep flocks of ſheep. Among thoſe tribes which apply to agriculture, the ſchiechs live always in tents, and leave the culture of their grounds to their ſubjects, whoſe dwellings are wretched huts. Schiechs always ride on horſes or dromedaries, inſpecting the conduct of their ſubjects, viſiting their friends, or hunting. Traverſing the deſert, where the horizon is wide as on the ocean, they perceive travellers at a diſtance. As travellers are ſeldom to be met with in thoſe wild tracts, they eaſily diſcover ſuch as paſs that way, and are tempted to pillage them when they find their own party the ſtrongeſt."

SCHINUS, in botany: A genus of the decandria order, belonging to the dioecia claſs of plants; and in the natural method ranking under the 43d order, *Dumoſæ*. The male calyx is quinquefid; the petals five. The female flower is the ſame as in the male; the berry tricoccous.

SCHIRAS, or SCHIRAUZ, a large and famous town of Perſia, capital of Farſiſtan, is three miles in length from eaſt to weſt, but not ſo much in breadth. It is ſeated at the north-weſt end of a ſpacious plain ſurrounded with very high hills, under one of which the town ſtands. The houſes are built of bricks dried in the ſun; the roofs are flat and terraced. There are 15 handſome moſques, tiled with ſtones of a bluiſh green colour, and lined within with black poliſhed marble. There are many large and beautiful gardens, ſurrounded with walls fourteen feet high, and four thick. They contain various kinds of very fine trees, with fruits almoſt of every kind, beſides various beautiful flowers. The wines of Schiras are not only the beſt in Perſia, but, as ſome think, in the whole world. The women are much addicted to gallantry, and Schiras is called *an earthly paradiſe* by ſome. The ruins of the famous Perſepolis are 30 miles to the north-eaſt of this place. E. Long. 56. 0. N. Lat. 29. 36.

Schiſm || Schmedelia.

SCHISM, (from the Greek, σχισμα, *cliſ*, *fiſſure*), in its general acceptation ſignifies *diviſion* or *ſeparation*; but is chiefly uſed in ſpeaking of ſeparations happening from diverſity of opinions among people of the ſame religion and faith.

Thus we ſay the *ſchiſm* of ten tribes of Judah and Benjamin, the *ſchiſm* of the Perſians from the Turks and other Mahometans, &c.

Among eccleſiaſtical authors, the great ſchiſm of the Weſt is that which happened in the times of Clement VII. and Urban VI. which divided the church for 40 or 50 years, and was at length ended by the election of Martin V. at the council of Conſtance.

The Romaniſts number 34 ſchiſms in their church. —They beſtow the name *Engliſh ſchiſm* on the reformation of religion in that kingdom. Thoſe of the church of England apply the term *ſchiſm* to the ſeparation of the nonconformiſts, viz the preſbyterians, independents, and anabaptiſts, for a further reformation.

SCHISTUS, in mineralogy, a name given to ſeveral different kinds of ſtones, but more eſpecially to ſome of the argillaceous kind; as,

1. The bluiſh purple ſchiſtus, ſchiſtus tegularis, or common roof-ſlate. This is ſo ſoft that it may be ſlightly ſcraped with the nail, and is of a very brittle lamellated texture, of the ſpecific gravity of 2,876. It is fuſible *per ſe* in a ſtrong heat, and runs into a black ſcoria. By a chemical analyſis it is found to conſiſt of 26 parts of argillaceous earth, 46 of ſiliceous earth, 8 of magneſia, 4 of calcareous earth, and 14 of iron. The dark-blue ſlate, or ſchiſtus ſcriptorius, contains more magneſia and leſs iron than the common purple ſchiſtus, and effervеſces more briſkly with acids. Its ſpecific gravity is 2,701.

2. The pyritaceous ſchiſtus is of a grey colour, brown, blue, or black; and capable of more or leſs decompoſition by expoſure to the air, according to the quantity of pyritous matter it contains and the ſtate of the iron in it. When this laſt is in a ſemi phlogiſticated ſtate it is eaſily decompoſed; but very ſlowly, or not at all, if the calx is much dephlogiſticated. The aluminous ſchiſtus belongs to this ſpecies.

3. The bituminous ſchiſtus is generally black, and of a lamellated texture, of various degrees of hardneſs, not giving fire with ſteel, but emitting a ſtrong ſmell when heated, and ſometimes without being heated. M. Magellan mentions a ſpecimen which burns like coal, with a ſtrong ſmell of mineral bitumen, but of a yellowiſh brown, or rather dark aſh colour, found in Yorkſhire.—This kind of ſchiſtus does not ſhow any white mark when ſcratched like the other ſchiſtus.

SCHMEDELIA, in botany: A genus of the digynia order, belonging to the octandria claſs of plants. The

Schoenobates / Schomberg

The calyx is diphyllous; the corolla tetrapetalous; the germina pedicellated, and longer than the flower.

SCHOENOBATES (from the Greek, σχοινος, *a rope*; and βαινω, *I walk*), a name which the Greeks gave to their rope-dancers: by the Romans called *funambuli*. See ROPE-DANCER and FUNAMBULUS.

The *schœnobates* were slaves whose masters made money of them, by entertaining the people with their feats of activity. *Mercurialis de arte gymnastica, lib.* III. gives us five figures of *schœnobates* engraven after ancient stones.

SCHOENUS, in botany: A genus of the monogynia order, belonging to the triandria class of plants; and in the natural method ranking under the 3 order, *Calmariæ*. The glumes are palaceous, univalved, and thickset; there is no corolla, and only one roundish seed between the glumes.

SCHOLASTIC, something belonging to the schools. See SCHOOL.

Scholastic Divinity, is that part or species of divinity which clears and discusses questions by reason and arguments; in which sense it stands, in some measure, opposed to *positive divinity*, which is founded on the authority of fathers, councils, &c. The school-divinity is now fallen into contempt; and is scarce regarded anywhere but in some of the universities, where they are still by their charters obliged to teach it.

SCHOLIAST, or COMMENTATOR, a grammarian who writes *scholia*, that is, notes, glosses, &c. upon ancient authors who have written in the learned languages. See the next article.

SCHOLIUM, a note, annotation, or remark, occasionally made on some passage, proposition, or the like. This term is much used in geometry and other parts of mathematics, where, after demonstrating a proposition, it is customary to point out how it might be done some other way, or to give some advice or precaution in order to prevent mistakes, or add some particular use or application thereof.

SCHOMBERG (Frederic-Armand duke of), a distinguished officer, sprung from an illustrious family in Germany, and the son of count Schomberg by an English lady, daughter of lord Dudley, was born in 1668. He was initiated into the military life under Frederic-Henry prince of Orange, and afterwards served under his son William II. of Orange, who highly esteemed him. He then repaired to the court of France, where his reputation was so well known, that he obtained the government of Gravelines, of Furnes, and the surrounding countries. He was reckoned inferior to no general in that kingdom except marechal Turenne and the prince of Condé; men of such exalted eminence that it was no disgrace to acknowledge their superiority. The French court thinking it necessary to dimish the power of Spain, sent Schomberg to the assistance of the Portuguese, who were engaged in a war with that country respecting the succession to their throne.—Schomberg's military talents gave a turn to the war in favour of his allies. The court of Spain was obliged to solicit for peace in 1668, and to acknowledge the house of Braganza as the just heirs to the throne of Portugal. For his great services he was created count Mentola in Portugal; and a pension of 5000 l. was bestowed upon him, with the reversion to his heirs.

In 1673 he came over to England to command the army; but the English at that time being disgusted with the French nation, Schomberg was suspected of coming over with a design to corrupt the army, and bring it under French discipline. He therefore found it necessary to return to France, which he soon left, and went to the Netherlands. In the month of June 1676, he forced the prince of Orange to raise the siege of Maestricht; and it is said he was then raised to the rank of marechal of France. But the French *Dictionnaire Historique*, whose information on a point of this nature ought to be authentic, says, that he was invested with the honour the same year in which he took the fortress of Bellegarde from the Spaniards while serving in Portugal.

Upon the revocation of the edict of Nantes, when the persecution commenced against the Protestant, Schomberg, who was of that persuasion, requested leave to retire into his own country. This request was refused; but he was permitted to take refuge in Portugal, where he had reason to expect he would be kindly received on account of past services. But the religious zeal of the Portuguese, though it did not prevent them from accepting assistance from a heretic when their kingdom was threatened with subversion, could not permit them to give him shelter when he came for protection. The inquisition interfered, and obliged the king to send him away. He then went to Holland by the way of England. Having accepted an invitation from the elector of Brandenburg, he was invested with the government of Ducal Prussia, and appointed commander in chief of the elector's forces. When the prince of Orange sailed to England to take possession of the crown which his father-in-law James II. had abdicated, Schomberg obtained permission from the elector of Brandenburg to accompany him. He is supposed to have been the author of an ingenious stratagem which the prince employed after his arrival in London to discover the sentiments of the people respecting the revolution. The stratagem was, to spread an alarm over the country that the Irish were approaching with fire and sword. When the prince was established on the throne of England, Schomberg was appointed commander in chief of the forces and master of the ordnance. In April 1689 he was made knight of the garter, and naturalized by act of Parliament; and in May following was created a baron, earl, marquis, and duke of the kingdom of England, by the name and title of baron Teys, earl of Brentford, marquis of Harwich, and duke of Schomberg. The House of Commons voted to him L. 100,000 as a reward for his services. Of this he only received a small part; but after his death a pension of L. 5000 a year was bestowed upon his son.

In August 1689 he was sent to Ireland to reduce that kingdom to obedience. When he arrived, he found himself at the head of an army consisting only of 12,000 foot and 2000 horse, while king James commanded an army three times more numerous. Schomberg thought it dangerous to engage with so superior a force, and being disappointed in his promised supplies from England, judged it prudent to remain on the defensive. He therefore posted himself at Dundalk, about five or six miles distance from James, who was encamped at Ardee. For six weeks he remained in this position, without attempting to give battle, while from the weakness of the region he lost nearly the half of his army. Schomberg was

much

School. much blamed for not coming to action; but ſome excellent judges admired his conduct as a diſplay of great military talents. Had he riſked an engagement, and been defeated, Ireland would have been loſt. At the famous battle of the Boyne, fought on the 1ſt July 1690, which decided the fate of James, Schomberg paſſed the river at the head of his cavalry, defeated eight ſquadrons of the enemy, and broke the Iriſh infantry. When the French Proteſtants loſt their commander, Schomberg went to rally and lead them on to charge. While thus engaged, a party of king James's guards, which had been ſeparated from the reſt, paſſed Schomberg, in attempting to rejoin their own army. They attacked him with great fury, and gave him two wounds in the head. As the wounds were not dangerous, he might ſoon have recovered from them; but the French Proteſtants, perhaps thinking their general was killed, immediately fired upon the guards, and ſhot him dead on the ſpot. He was buried in St Patrick's cathedral.

Biſhop Burnet ſays, Schomberg was "a calm man, of great application and conduct, and thought much better than he ſpoke; of true judgment, of exact probity, and of an humble and obliging temper."

SCHOOL, a public place, wherein the languages, the arts, or ſciences, are taught. Thus we ſay, a grammar *ſchool*, a writing *ſchool*, a *ſchool* of natural philoſophy, &c.—The word is formed from the Latin *ſchola*, which, according to Du Cange, ſignifies *diſcipline* and *correction;* he adds, that it was anciently uſed, in general, for all places where ſeveral perſons met together, either to ſtudy, to converſe, or do any other matter. Accordingly, there were *ſcholæ palatinæ*, being the ſeveral poſts wherein the emperor's guards were placed; *ſchola ſcutariorum*, *ſchola gentilium*, &c. At length the term paſſed alſo to civil magiſtrates; and accordingly in the code we meet with *ſchola chartulariorum*, *ſchola agentium*, &c.; and even to eccleſiaſtics, as *ſchola cantorum*, *ſchola ſacerdotum*, &c.

The Hebrews were always very diligent to teach and ſtudy the laws that they had received from Moſes. The father of the family ſtudied and taught them in his own family. The Rabbin taught them in the temple, in the ſynagogues, and in the academies. They pretend, that even before the deluge there were ſchools for knowledge and piety, of which the patriarchs had the direction.—They place Adam at their head, then Enoch, and laſtly Noah. Melchiſedec, as they ſay, kept a ſchool in the city of Kajrath-ſepher, otherwiſe Hebron, in Paleſtine. Abraham, who had been inſtructed by Heber, taught in Chaldea and in Egypt. From him the Egyptians learned aſtronomy and arithmetic. Jacob ſucceeded Abraham is the office of teaching. The ſcripture ſays, he was "a plain man dwelling in tents;" which, according to the Chaldee paraphraſt, is, "that he was a perfect man, and a miniſter of the houſe of doctrine."

All this, indeed, muſt be very precarious and uncertain. It cannot be doubted but that Moſes, Aaron, and the elders of Iſrael, inſtructed the people in the wilderneſs, and that many good Iſraelites were very induſtrious to inſtruct their families in the fear of God. But all this does not prove to us that there were any ſuch ſchools as we are now inquiring after. Under Joſhua we ſee a kind of academy of the prophets, where the children of the prophets, that is, their diſciples, lived in the exerciſe of a retired and auſtere life, in ſtudy, in the meditation and reading of the law of God. There were ſchools of the prophets at Naioth in Ramah; 1 Sam. xix. 12. 20, &c. See the article PROPHET.

Theſe ſchools, or ſocieties of the prophets, were ſucceeded by the ſynagogues. See the article SYNAGOGUE.

Charity-Schools are thoſe ſchools which are ſet apart by public contributions or private donations for the inſtruction of poor children, who could not otherwiſe enjoy the benefits of education. In few countries are theſe more numerous than in Great Britain, where charity and benevolence are characteriſtic of the nation at large. They following is a ſummary view of the number of charity ſchools in Great Britain and Ireland, according to the beſt information at preſent, 1795.

	Schools.	Boys.	Girls.
At London -	182	4442	2870
In other parts of South Britain, -	1329	19506	3915
In North Britain, by the account publiſhed in 1786,	135	5187	2618
In Ireland, for teaching to read and write only,	168	2406	600
In ditto, erected purſuant to his majeſty's charter, and encouraged by his bounty of L. 1000 *per annum*, for inſtructing, employing, and wholly maintaining the children, excluſive of the Dublin work-houſe ſchool,	42	1935	——
Total of ſchools, &c.	1856	33476	10003

Sunday-Schools are another ſpecies of charity-ſchools lately inſtituted, and now pretty common in Great Britain. The inſtitution is evidently of the firſt importance; and if properly encouraged muſt have a very favourable effect on the morals of the people, as it tends not only to preſerve the children of the poor from ſpending Sunday in idleneſs, and of conſequence in diſſipation and vice, but enables them to lay in for the conduct and comfort of their future life a ſtock of uſeful knowledge and virtuous principles, which, if neglected in early life, will ſeldom be ſought for or obtained amidſt the hurry of buſineſs and the cares and temptations of the world.

The excellent founder of Sunday-ſchools was Mr. Raikes, a gentleman of Glouceſterſhire, who, together with Mr Stock, a clergyman in the ſame county, and who, we believe, was equally inſtrumental in the buſineſs with Mr Raikes, ſhewed the example, and convinced many of the utility of the plan. From Glouceſterſhire the inſtitution was quickly adopted in every county and almoſt every town and pariſh of the kingdom; and we have only further to remark on a plan ſo generally known, ſo much approved, and ſo evidently proper, that we hope men of eminence and weight will always be found ſufficiently numerous and willing to beſtow their time and countenance in promoting it to the utmoſt of their power.

SCHOONER,

Schooner, Schorl.

SCHOONER, in ſea-language, a ſmall veſſel with two maſts, whoſe main-ſail and fore-ſail are ſuſpended from gaffs, reaching from the maſt towards the ſtern, and ſtretched out below by booms, whoſe foremoſt ends are hooked to an iron, which claſps the maſt ſo as to turn therein as upon an axis, when the after-ends are ſwung from one ſide of the veſſel to the other.

SCHORL, a precious ſtone of the ſecond order, of which the varieties are, *Siberian*, ruby coloured, reddiſh, green, brown, blue, and black; *mother of emerald*, dark green; *lapis cruciferus*, or the *croſs ſtone*; bar ſchorl; horn blend, black, green, or blue; *Granite*, blue ſchorl; *Thumſtein*; *Laxman's quadrangular ſchorl*. Tranſparent ſchorl is chryſtallized in polygonal prisms, generally with four, ſix, or nine ſides; ſome of them are ſo fine as to paſs for gems of the firſt order, eſpecially for the emerald. In the ſemitranſparent ſchorls there are likewiſe ſome of great beauty, as the ruby coloured, lately diſcovered in Siberia by counſellor Herman, in a bed of reddiſh argilla, mixed with fragments of felt ſpath, quartz, and mica, on a low granite mountain. The bed of argilla is evidently produced by the decompoſition of granite; which operation Herman ſuppoſes muſt have ſet at liberty the ruby ſchorl formerly pent up in the chinks of fiſſures of the decompoſed part of the mountain. The diſcovery is quite new, no ſuch ſpecies being before known, as it is as hard as the firſt order of precious ſtones, the diamond excepted, takes a fine poliſh, and equals in colour the oriental ruby, though not in tranſparency.

Its ſtructure is made up of fine cylindric columns, like needles collected into bundles or treſſes, lying one on another in different directions, whilſt each individual column is made up of fine plates or laminæ, like the gems. It is fuſible *per ſe* into a white tranſparent glaſs, and melts imperfectly with borax when calcined, as it does with microcoſmic ſalt and mineral alkali, into a ſmall vitreous globe, with little ſpots of a white enamel colour. Acids have no effect upon it, even when calcined. Laſtly, it loſes its colour in the fire, after having firſt turned blue. The mother of emeralds is likewiſe a ſemitranſparent ſchorl, in the opinion of ſome able naturaliſts, although Mr Born aſſerts it to be a jade, we know not upon what authority.

The ſtructure of the ſemitranſparent ſchorls, and ſome of the tranſparent that are not ſo perfectly diaphanous as to conceal their texture, is obſcurely ſparry; but that of the opaque is either filamentous, like aſbeſtos, or hard and brittle like threads of glaſs, or it is compoſed of ſcales. Of this laſt kind is that called *hornblend*, which is generally green or black; but there is a beautiful variety of it found on the mount St Gothard, in Switzerland, of a fine ſky-blue colour covered with ſilver talk. Bar ſchorl has been found on the Carpathian mountains chryſtallized in prisms. Lapis crucifer, or the croſs ſtone, is found ſometimes near Brazil in Switzerland, and there named Tauilſtein, or cimitering ſtone; but oftener at Thum in Saxony, and therefore named there Thumſtein. It is a ſchorl in form of a croſs: that of Brazil conſiſts of two hexagonal chryſtals. The exact cryſtallization of the other is unknown to us.

Moſt countries produce ſchorls. Ruſſia is particularly rich in ſchorls. It is even difficult to point out all the different places of the empire which produce them; but we ſhall take notice of thoſe moſt remarkable, particularly new diſcoveries. The ruby-coloured ſchorl mentioned above was found by Mr Herman at Sarapoulſky, a village in the government of Perm, ten verſts from Mourſinſky Slabode, in Siberia. The Siberian inſpector, Mr Laxman, has lately diſcovered in the mountain Alpeſtria, on the river Sleudenka near the lake Baikal, the following new ſchorls. Firſt, a green tranſparent ſchorl, of ſo brittle a nature as not to bear carriage without breaking into ſmall pieces truncated. Pallas is poſitive in declaring this dark green ſchorl a hyacinth. This laſt has often ſome of the ſmall yellowiſh white garnets ſticking in it, deſcribed in the article GARNET, where an account will be found of the ſpecies of matrix that contains them all. Schorls are likewiſe found in the mountains and mines of Niſelga, Kratnavolok, and Sondala, as likewiſe between the Onega Lake and White Sea. Black ſchorl is likewiſe found near the White Sea, and in the Altai, Ural, and Daurian mountains.

None of the tranſparent ſchorls have been found in Scotland as far as we have heard; but many varieties of the opake kinds have been found in various places, particularly in the iſland of Arran, where there is a bed of greeniſh horn like ſchorl of immenſe extent near the harbour of Lamlaſh.

Fine ſpecimens of ſchorl are dear; the ruby ſchorl from Siberia, 25 to 50 rubles a ring ſtone; the green, when fine, from 15 to 30. The high price of the ruby ſchorl is owing to its novelty and rarity; and of the green, is owing to its paſſing for an emerald. The ſpecific gravity of ſchorl is 3,6.

SCHOTIA, in botany: A genus of the monogynia order, belonging to the decandria claſs of plants; and in the natural method ranking under the 33d order, *Lomentaceæ*. The calyx is ſemiquinquefid; the corolla has five petals, which are equal; the tube is turbinated, carnous, and perſiſtent. The legumen pedicellated, and contains two ſeeds; there is only one ſpecies, viz. the ſpecioſa, or African Lignum vitæ.

Schotia ‖ Schultens.

SCHREBERA, in botany: A genus of the digynia order, belonging to the pentandria claſs of plants; and in the natural method ranking with thoſe of which the order is doubtful. The calyx is quinquepartite; the corolla funnel ſhaped, with the filaments in the throat, and having each a ſcale at the baſe.

SCHREVELIUS (Cornelius), a laborious Dutch critic and writer, who has given the public ſome editions of the ancient authors more elegant than correct: his Greek Lexicon is eſteemed the beſt of all his works. He died in 1667.

SCHULTENS (Albert), profeſſor of Hebrew and of the eaſtern languages at Leyden, and one of the moſt learned men of the 18th century, was born at Groningen, where he ſtudied till the year 1706, and from thence continued his ſtudies at Leyden and Utrecht. Schultens at length applied himſelf to the ſtudy of Arabic books, both printed and in manuſcript; in which he made great progreſs. A ſhort time after he became miniſter of Waſſenar, and two years after profeſſor of the eaſtern tongues at Franeker. At length he was invited to Leyden, where he taught Hebrew and the eaſtern languages with extraordinary reputation till his death, which happened in 1750. He wrote many learned works; the principal of which are,

Schurman
Schwarts.

are, 1. A Commentary on Job, 2 vols 4to. 2. A Commentary on the Proverbs. 3. *Vetus & regia via Hebraizandi.* 4. *Animadverſiones philologicæ & criticæ ad varia loca Veteris Teſtamenti.* 6. An excellent Hebrew grammar, &c. Schultens diſcovered in all his works found criticiſm and much learning. He maintained againſt Couſſet and Drieſſen, that in order to have a perfect knowledge of Hebrew, it is neceſſary to join with it, not only the Chaldee and Syriac, but more particularly the Arabic.

SCHURMAN (Anna Maria), a moſt extraordinary German lady. Her natural genius diſcovered itſelf at ſix years of age, when ſhe cut all ſorts of figures in paper with her ſciſſars without a pattern. At eight, ſhe learned, in a few days, to draw flowers in a very agreeable manner. At ten, ſhe took but three hours to learn embroidery. Afterwards ſhe was taught muſic, vocal and inſtrumental; painting, ſculpture, and engraving; in all of which ſhe ſucceeded admirably. She excelled in miniature-painting, and in cutting portraits upon glaſs with a diamond. Hebrew, Greek, and Latin, were ſo familiar to her, that the moſt learned men were aſtoniſhed at it. She ſpoke French, Italian, and Engliſh, fluently. Her hand-writing, in almoſt all languages, was ſo inimitable, that the curious preſerved ſpecimens of it in their cabinets. But all this extent of learning and uncommon penetration could not protect her from falling into the errors of Labadie, the famous French enthuſiaſt, who had been baniſhed France for his extravagant tenets and conduct. To this man ſhe entirely attached herſelf, and accompanied him wherever he went; and even attended him in his laſt illneſs at Altena in Holſtein. Her works, conſiſting of *De vitæ humanæ termino*, and *Diſſertatio de ingenii muliebris ad doctrinam et meliores literas aptitudine*, and her Letters to her learned correſpondents, were printed at Leyden in 1648; but enlarged in the edition of Utrecht, 1662, in 12mo, under the following title: *A. M. Schurman Opuſcula Hebræa, Græca, Latina, Gallica, Proſaica, et Metrica.* She publiſhed likewiſe at Altena, in Latin, A Defence of her attachment to Labadie, while ſhe was with him in 1673; not worth reading. She was born at Cologne in 1607, but reſided chiefly in Holland, and died in Frieſland in 1678.

SCHALBEA, in botany: A genus of the angioſpermia order, belonging to the didynamia claſs of plants. The calyx is quadrifid, with a ſuperior lobe; the lowermoſt longeſt, and emarginated.

SCHWARTS (Chriſtopher), an eminent hiſtory-painter, born at Ingolſtadt in 1550, who was diſtinguiſhed by the appellation of the *German Raphael.* He learned the firſt principles of the art in his own country, but finiſhed his ſtudies at Venice; when he not only made the works of Titian his models, but had the advantage of receiving ſome perſonal inſtructions from that illuſtrious maſter. His performances were ſoon in the higheſt eſteem; as his manner of painting was very different from what the Germans had been accuſtomed to before that time: he was, therefore, invited by the elector of Bavaria to his court, and appointed his principal painter. He died in 1594; and his moſt capital works, as well in freſco as in oil, are in the palace at Munich, and in the churches and convents.

SCHWARTENBURG, a town and caſtle of Germany, and circle of Upper Saxony, in the landgravate of Thuringia, and capital of a county of the ſame name belonging to a prince of the houſe of Saxony. It is ſeated on the river Schwartz, 20 miles ſouth-eaſt of Erfurd, and 35 north of Cullembach. E. Long. 11. 27. N. Lat. 50. 45.

Schwartenburg
||
Schwenkfelders.

SCHWARTZEMBERG, a town of Germany, in the circle of Franconia, and capital of a principality of the ſame name. The caſtle is ſeated on the river Lec, 5 miles north weſt of Nuremberg, and 20 eaſt of Wertzburg, ſubject to its own prince. E. Long. 10. 27. N. Lat. 49. 43.

SCHWEIDNITZ, a ſtrong town of Germany, in Sileſia, and capital of a province of the ſame name, with a caſtle. It is the handſomeſt town of Sileſia, next to Breſlaw. The ſtreets are large, the church fine, and the houſes well built. The fortifications are not very conſiderable, and the royal palace is turned into a convent. All the magiſtrates are Roman Catholics; but moſt of the inhabitants are Proteſtants, who have a church without the town, as alſo a public ſchool and bells. It is ſeated on an eminence on the river Weiſtritz, 27 miles ſouth-eaſt of Lignitz, and 22 ſouth-weſt of Breſlaw. E. Long. 16. 48. N. Lat. 50. 46.

SCHWEINFURT, a very ſtrong, free, and imperial town of Germany, in Franconia, with a magnificent palace, where the ſenators meet, who are 12 in number. The environs are rich in cattle, corn, and wine; the inhabitants are Proteſtants, and not very rich. However, they carry on a large trade in woollen and linen cloth, gooſe-quills, and feathers. It is ſeated on the river Main, 27 miles north-eaſt of Wirtzburg, and 22 weſt of Bamberg. E. Long. 10. 25. N. Lat. 50. 4.

SCHWENKFELDERS, a denomination of Chriſtians, ſo called after Caſper Schwenkfeld von Oſſing, a noted nobleman, in the ſixteenth century. He was born 1490, in the Pricipality of Liegnitz in Sileſia. He ſtudied ſeveral years at Cologn and other univerſities, after this he was in ſervice by the duke of Munſterberg, and Brieg, until he was diſabled by bodily infirmities from attending the buſineſs of that court. He then applied himſelf to divinity; about this time the reformation was begun in Germany, which attracted his whole attention. The chief reformers, Luther, Melanchton, &c. he held in high eſteem, but was decided in his opinion, that they ſtill retained ſeveral relicks of popery in their doctrine.

He differed from Luther about the euchariſt, in which he could not agree with him, that the body and blood of Chriſt were materially preſent in the Lord's ſupper, whether in bread or wine: The words of Chriſt, Matt. xxvi. verſe 26, and 28, "This is my body: this is my blood," he took in this ſenſe: That as bread and wine are a ſubſtantial nouriſhment of our bodies in this natural life, ſo were likewiſe the body and blood of our Saviour, a ſubſtantial nouriſhment to the ſouls of the faithful in the new ſpiritual life received from above. The object of this ſupper among Chriſtians, ſhould be the remembrance of their Saviour's unbounded love, and to ſhow his death. Schwenkfeld wrote 12 Queſtions to Luther, concerning the impanation of the body of Chriſt, which he anſwered in his uſual rough ſtyle, telling him that he ſhould not irritate the church

of

Schwenkfelders.

of Chriſt, that the blood of thoſe he ſhould ſeduce, would fall upon his head. Notwithſtanding this, he ſtill expoſtulated with Luther, and desired a candid examination of his arguments, which ſo irritated Luther, that he wrote a very indecent maledictory letter to Schwenkfeld.

He wrote about 90 treatiſes and pamphlets in German and Latin, on religious ſubjects, moſt of which were printed, and are yet extant, though whole editions were confiſcated and deſtroyed; he had an extenſive correſpondence all over the empire, with perſons of every rank and deſcription. The moſt material of his Letters were printed, whereof three large folio volumes are yet left: in his writings he diſplayed a penetrating judgement, with a true Chriſtian moderation. He often declared in his writings, that it was by no means his object to form a ſeparate church, expreſſing an ardent deſire to be ſerviceable to all Chriſtians of whatever denomination; but his freedom in giving admonition to thoſe whom he thought erroneous, brought on him the implacable enmity of Proteſtants and Papiſts: His writings were forbid to be printed; ſuch as were printed, were often confiſcated and deſtroyed; and his perſon was in danger from his perſecutors. He died in the city of Ulm 1562, in the 72d year of his age; his learning and exemplary piety is generally acknowleged, even by his bittereſt antagoniſts (A).

After his death, there were numbers of people in different parts of Germany, who thought themſelves convinced that his doctrine was right and orthodox; they were generally called Schwenkfelders, and were everywhere reproached and perſecuted at the inſtigation of the eſtabliſhed clergy: The greateſt numbers of them were in Sileſia, particularly in the principalities of Leignitz and Jawr. The eſtabliſhed clergy there being Lutherans, uſed every intrigue to oppreſs them; in particular if they aſſembled for religious worſhip, they were thrown into priſons and dungeons, where many of them periſhed.

Such was often their fate, until in 1719 the Jeſuits thought the converſion of the Schwenkfelders an object worth their attention. They ſent miſſionaries to Sileſia, who preached to that people the faith of the emperor; they produced imperial edicts that all parents ſhould attend the public worſhip of the miſſionaries, and bring their children to be inſtructed in the holy catholic faith, under ſevere penalties. The Schwenkfelders ſent deputies to Vienna, to ſolicit for toleration and indulgence, and though the emperor apparently received them with kindneſs and condeſcenſion, yet the Jeſuits had the addreſs to procure another imperial edict, ordering that ſuch parents as would not bring every one of their children to the miſſionaries for inſtruction, ſhould at laſt be chained to the wheel-barrow, and put to hard labour on the public works, and their children ſhould by force be brought to the monaſteries. Upon this, many families fled in the night into Luſatia and other parts of Saxony, leaving behind them their effects, real and perſonal, (the roads being beſet in the day time by guards to ſtop all emigrants); of theſe in 1734, a ſmall number emigrated over Altona and Holland into Pennſylvania, where they ſettled and formed themſelves into a religious ſociety. Schwenkfelders.

The laſt mentioned edict was not put in its fulleſt rigour by the miſſionaries, till after the death of Charles VI. when another edict was publiſhed, which threatened the total extermination of the remaining Schwenkfelders, from which they were unexpectedly relieved by the king of Pruſſia making a conqueſt of all Sileſia, who immediately publiſhed an edict in which he recalled all thoſe Schwenkfelders that were emigrated, and promiſed them their eſtates, with toleration and protection not only in Sileſia, but in all other parts of his dominions. Schwenkfelders.

SCHWENKFELDIA, in botany: A genus of the monogynia order, belonging to the pentandria claſs of plants; and in the natural method ranking with thoſe that are doubtful. The calyx is quinquefid; the corolla funnel ſhaped; the ſtigma parted into five; the berry quinquelocular, with a number of ſeeds. Of this there are three ſpecies, viz. 1. Cinerea, 2. Aſpera; 3. Hirta. The two firſt are natives of Guiana, the other of Jamaica. The leaves of all of them are remarkably rough, and ſtick to the fingers or clothes.

SCHWENKIA, in botany: A genus of the monogynia order, belonging to the diandria claſs of plants. The corolla is almoſt equal, plaited at the throat, and glandulous; there are three barren ſtamina; the capſule bilocular and polyſpermous.

SCHWINBURG, a town of Denmark, on the eaſtern coaſt of the iſland of Fionia, over-againſt the iſlands of Arroa and Langeland. E. Long. 10. 55. N. Lat. 55. 8.

SCHWITZ, or Switz, a canton of Swiſſerland, which gives name to them all. It is bounded on the weſt by the lake of the four cantons, on the ſouth by the canton of Uri, on the eaſt by that of Glaris, and on the north by thoſe of Zurich and Zug. Its principal riches conſiſt in cattle, and the capital town is of the ſame name. This is a large, handſome place, ſeated near the lake of the four cantons, in a pleaſant country among the mountains. E. Long. 8. 41. N. Lat. 47. 2.

SCIACCA, anciently called *Thermæ Selinuntiæ*, in Sicily, derives its preſent denomination from the Arabic word *Scheich*. It is a very ancient place, being mentioned in the account of the wars between the Greeks and Carthaginians, to the latter of whom it belonged. It is defended by ancient walls and the caſtle of Luna. It ſtands upon a very ſteep rock, hanging over the ſea, and excavated in every direction into prodigious magazines, where the corn of the neighbouring territory is depoſited for exportation; there is no harbour, but a ſmall bay formed by a wooden pier, where lighters lie to load the corn which they carry out about a mile to ſhips at anchor.

The town is irregularly but ſubſtantially built, and contains 13,000 inhabitants, though Amico's *Lexicon Topographicum* ſays the laſt enumeration found only 9484. His accounts do not take in eccleſiaſtics, and ſeveral denominations of lay perſons.

SCIÆNA, in ichthyology, a genus belonging to the order of thoracici. The membrane of the gills

(A) The above particulars, with many others, can alſo be found in G. Arnoldus, M. Salig, and other impartial hiſtorians, and are produced from authentic documents.

Sciatica. Scilla.

has six rays; the opercula and whole head are scaly. There are five species.

SCIATICA, the HIP-GOUT. See MEDICINE, n° 207.

SCIENCE, in philosophy, denotes any doctrines deduced from self-evident principles.

Sciences may be properly divided as follows, 1. The knowledge of things, their constitutions, properties, and operations: this, in a little more enlarged sense of the word, may be called φυσικη, or *natural philosophy*; the end of which is speculative truth. See PHILOSOPHY and PHYSICS.—2. The skill of rightly applying these powers, πρακτικη: The most considerable under this head is ethics, which is the seeking out those rules and measures of human actions that lead to happiness, and the means to practice them (see MORAL PHILOSOPHY); and the next is mechanics, or the application of the powers of natural agents to the uses of life (see MECHANICS).—3. The doctrine of signs, σημειωτικη; the most usual of which being words, it is aptly enough termed *logic*. See LOGIC.

This, says Mr Locke, seems to be the most general, as well as natural, division of the objects of our understanding. For a man can employ his thoughts about nothing but either the contemplation of things themselves for the discovery of truth; or about the things in his own power, which are his actions, for the attainment of his own ends; or the signs the mind makes use of both in the one and the other, and the right ordering of them for its clearer information. All which three, *viz.* things as they are in themselves knowable, actions as they depend on us in order to happiness, and the right use of signs in order to knowledge, being *toto cælo* different, they seem to be the three great provinces of the intellectual world, wholly separate and distinct one from another.

SCILLA, the SQUILL, in botany: A genus of the monogynia order, belonging to the hexandria class of plants; and in the natural method ranking under the 10th order, *Coronariæ*. The corolla is hexapetalous and deciduous; the filaments filiform.

The most remarkable species is the maritima, or sea-onion, whose roots are used in medicine. Of this there are two sorts, one with a red, and the other with a white root; which are supposed to be accidental varieties, but the white are generally preferred for medicinal use. The roots are large, somewhat oval shaped, composed of many coats lying over each other like onions; and at the bottom come out several fibres. From the middle of the root arise several shining leaves, which continue green all the winter, and decay in the spring. Then the flower-stalk comes out, which rises two feet high, and is naked half way, terminating in a pyramidal thyrse of flowers, which are white, composed of six petals, which spread open like the points of a star. This grows naturally on the sea-shores, and in the ditches, where the salt water naturally flows with the tide, in most of the warm parts of Europe, so cannot be propagated in gardens; the frost in winter always destroying the roots, and for want of salt-water they do not thrive in summer. Sometimes the roots which are bought for use put forth their stems and produce flowers as they lie in the druggists shops.—This root is very nauseous to the taste, intensely bitter, and so acrimonious, that it ulcerates the skin if much handled. Taken internally, it powerfully stimulates the solids, and promotes urine, sweat, and expectoration. If the dose is considerable, it proves emetic, and sometimes purgative. The principal use of this medicine is where the primæ viæ abound with mucous matter, and the lungs are oppressed by tenacious phlegm. It has been recommended in hydropic cases, taken in powder, from four to ten grains in a dose, mixed with a double quantity of nitre. The most commodious mode of exhibiting this root is as a bolus or pill. Liquid forms are too disagreeable to most people; though this may be remedied in some degree by the addition of some aromatic distilled waters. It yields the whole of its virtues to aqueous and vinous menstrua, and likewise to vegetable acids.

Scilly.

SCILLY, or SILLEY, a cluster of small islands and rocks, situated in the Atlantic Ocean, in W. Long. 7°. N. Lat. 50°.

These islands were first called *Cassiterides*, or the *Tin Isles*, from their being rich in that metal. The common opinion is, that this is a Greek appellation; which in the most obvious sense is true: But as the Phœnicians were familiar with the metal, and with the country that produced it, before the Greeks knew any thing of either, it is very likely they introduced the names of both from their own language. Strabo says these islands were ten in number, lying close together, of which only one was uninhabited: the people led an erratic life, lived upon the produce of their cattle, wore an under-garment which reached down to their ankles, and over that another, both of the same colour, which was black, girt round a little below the breast with a girdle, and walked with staves in their hands. The riches of their islands were tin and lead, which, with the skins of their cattle, they exchanged, with foreign merchants, that is, the Phœnicians from Cadiz, for earthen-ware, salt, and utensils made of brass. An author of as great or greater antiquity, seems to include a part at least of Cornwall amongst these islands; or rather he suggests, that they were not perfect islands except at full sea, but that at ebb the inhabitants passed from one to another upon the sands, and that they even transported their tin in large square blocks upon carriages from one island to another. He farther takes notice, that such as inhabited about Belerium (the Land's End) were in their conversation with strangers remarkably civil and courteous. Other ancient writers style these islands *Hesperides*, from their western situation, and *Oestrymnides*, asserting that the land was extremely fertile, as well as full of mines; and that the people, though very brave, were entirely addicted to commerce, and boldly passed the seas in their leather boats.

The Romans were exceedingly desirous of having a share in this commerce, which the Phœnicians as carefully laboured to prevent, by concealing their navigation to these islands as much as it was in their power. At length, however, the Romans prevailed; and Publius Crassus coming thither, was so well pleased with the industry and manners of the people, that he taught them various improvements, as well in working their mines, which till that time were but shallow, as in carrying their own merchandize to different markets. There is no room to doubt that they followed the fate of the rest of Britain, and particularly of Cornwall, in becoming subject to the Roman empire. We find them called in the Itinerary of Antoninus, *Siliæ*; by Sulpitius,

Scilly. Sulpitius, *Silinæ*: and by Solinus they are termed *Silures*. All we know of them during this period is, that their tin trade continued, and that sometimes state-prisoners, were exiled, or, to use the Roman phrase, relegated hither as well as to other islands.

When the legions were withdrawn, and Britain with its dependencies left in the power of the natives, there is no reason to question that these islands shared the same lot with the rest. As to the appellation which from this period prevailed, the ordinary way of writing it is *Scilly*: in records we commonly find it spelt *Sully*, *Silley*, or *Sulley*; but we are told the old British appellation was *Sulleh*, or *Sylev* which signifies rocks consecrated to the sun. We have not the least notice of any thing that regards them from the fifth to the tenth century. It is, however, with much appearance of truth conjectured, that some time within this space they were in a great measure destroyed by an earthquake, attended with a sinking of the earth, by which most of their lowlands, and of course the greatest part of their improvements, were covered by the sea, and those rich mines of tin which had rendered them so famous followed up in the deep. They have a tradition in Cornwall, that a very extensive tract of country called the *Lioncs*, in the old Cornish *Lethowsow*, supposed to lie between that country and Scilly, was lost in that manner; and there are many concurrent circumstances which render this probable. In reference to these islands, the case is still stronger: for at low tides their stone inclosures are still visible from almost all the isles, and thereby afford an ocular demonstration that they were formerly of far greater extent, and that in remoter ages their inhabitants must have been very numerous, and at the same time very industrious. This sufficiently proves the fact, that by such an earthquake they were destroyed; and that it happened at some period of time within those limits that have been assigned, appears from our hearing nothing more of their tin trade, and from our having no notice of it at all in any of our ancient chronicles, which, if it had fallen out later, from their known attention to extraordinary events, must certainly have happened.

It is generally supposed, and with great appearance of truth, that king Athelstan, after having overcome a very powerful confederacy formed against him, and having reduced Exeter, and driven the Britons beyond the river Tamar, which he made the boundary of their Cornish dominions, passed over into these islands, (then surely in a better state than now, or they would not have been objects of his vengeance), and reduced them likewise. History does not inform us, that the Danes ever fixed themselves in these islands; but as their method of fortifying is very well known, it has been conjectured that the Giant's Castle in the isle of St Mary was erected by them; and indeed, if we consider the convenient situation of these islands, and the trade of piracy which that nation carried on, there seems to be nothing improbable in that conjecture. It is more certain that there were churches erected in these isles, and that there were in them also many monks and hermits, before the conquest.

The fertility of the islands is much insisted upon in all the accounts; and it is expressly said of St Mary's that it bears exceeding good corn, insomuch that if men did but cast corn where swine had rooted, it would come up. There is mention made of a breed of wild swine, and the inhabitants had great plenty of fowl and fish. But notwithstanding the fertility of the country, and the many commodities that men had or might have there, it was nevertheless but thinly peopled; and the reason assigned is, because they were liable to be frequently spoiled by French or Spanish pirates. In Leland's time, one Mr Davers of Wiltshire, and Mr Whittington of Gloucestershire, were proprietors of Scilly, and drew from thence, in rents and commodities, about 40 merks a-year. Scilly.

The inhabitants at that juncture, and long before, appear to have carried on a small trade in dried skate and other fish to Bretagne, with which they purchased salt, canvas, and other necessaries. This seems to be the remains of a very old kind of commerce, since, for many ages, the people of that country, those of the Scilly isles, and the people of Cornwall, looked upon themselves as countrymen, being in truth no other than remnants of the ancient Britons, who, when driven out by the Saxons, took refuge in those islands, and in that part of France which had before been called *Armorica*, and from hence styled *Bretagne*, *Britany*, or *Little Britain*, and the people *Bretons*. This, in all probability, was a great relief to those who dwelt in those isles; who, during the long civil war between the houses of York and Lancaster, had their intercourse with England so much interrupted, that if it had not been for this commerce with their neighbours on the French coast, they might have been driven to the last distress.

The Scilly, or Silley islands, lie due west from the Lizard about 17 leagues; west and by south from the old Land's End, next Mount's Bay, at the distance of 10 leagues; and from the western Land's End, they lie west-south-west, at the distance of something more than nine leagues. There are five of them inhabited; and that called *Sampson* has one family in it. The largest of these is St Mary's, which lies in the north latitude of 49 degrees 55 minutes, and in the longitude of 6 degrees 40 minutes west from Greenwich. It is two miles and a half in length, about one and a half in breadth, and between nine and ten miles in compass. On the west side there projects an isthmus. Beyond this there is a peninsula, which is very high; and upon which stands Star Castle, built in 1593, with some outworks and batteries. On these there are upwards of threescore pieces of cannon mounted; and for the defence of which there is a garrison of an entire company, with a master-gunner and six other gunners. In the magazine there are arms for 300 islanders, who, when summoned, are bound to march into the fortess. Underneath the castle barracks and lines stands Hugh Town, very improperly built, as lying so low as to be subject to inundations. A mile within land stands Church Town, so denominated from their place of worship; it consists of a few houses only, with a court-house. About two furlongs east of this lies the Old Town, where there are more houses, and some of them very convenient dwellings. The number of inhabitants in this island is about 600 or 700; and it produces to the lord proprietor £ . . . *per annum*.

Trescaw lies directly north from St Mary's, at the distance of two miles. It was formerly styled *St Nicholas's island*; and was at least as large as St Mary's, though at present about half the size. The remains

Scilly. of the abbey are yet viſible, the ſituation well choſen, with a fine baſon of freſh water before it, half a mile long and a furlong wide, with an ever-green bank high enough to keep out the ſea, and ſerving at once to preſerve the pond, and ſhelter the abbey. In this pond there are moſt excellent eels, and the lands lying round it are by far the beſt in thoſe iſlands. There are about half a ſcore ſtone houſes, with a church, which are called *Dolphin Town*; an old caſtle built in the reign of Henry VIII. called Oliver's Caſtle; and a new block-houſe, raiſed out of the ruins of that caſtle, which is of far greater uſe. This iſland is particularly noted for producing plenty of the fineſt ſamphire, and the only tin works that are now viſible are found here. There are upon it at preſent about 40 families, who are very induſtrious, and ſpin more wool than in St Mary's. Its annual value is computed at 80 l. a-year.

A mile to the eaſt of Treſcaw, and about two miles from the moſt northern part of St Mary's, lies the iſle of *St Martin's*, not much inferior in ſize to that of Treſcaw. It very plainly appears to have been formerly extremely well cultivated; notwithſtanding which it was entirely deſerted, till within ſomewhat leſs than a century ago, that Mr Thomas Ekines, a conſiderable merchant, engaged ſome people to ſettle there. He likewiſe cauſed to be erected a hollow tower twenty feet in height, with a ſpire of as many feet more; which being neatly covered with lime, ſerves as a day-mark for directing ſhips croſſing the channel or coming into Scilly. St Martin's produces ſome corn, affords the beſt paſture in theſe iſlands, nouriſhes a great number of ſheep, and has upon it 17 families, who pretend to have the ſecret of burning the beſt kelp, and are extremely attached to their own iſland. As a proof of this, it is obſervable, that though ſome of the inhabitants rent lands in St Mary's, yet they continue to reſide here going thither only occaſionally.

St Agnes, which is alſo called the *Light-houſe Iſland*, lies near three miles ſouth-weſt of St Mary's; and is, though a very little, a very well cultivated iſland, fruitful in corn and graſs. The only inconvenience to which the people who live in it are ſubject, is the want of good water, as their capital advantage conſiſts in having ſeveral good coves or ſmall ports, where boats may lie with ſafety; which, however, are not much uſed. The light-houſe is the principal ornament and great ſupport of the iſland, which ſtands on the moſt elevated ground, built with ſtone from the foundation to the lanthorn, which is fifty one feet high, the gallery four, the faſh lights eleven feet and a half high, three feet two inches wide, and ſixteen in number. The floor of the lanthorn is of brick, upon which ſtands a ſubſtantial iron grate, ſquare, barred on every ſide, with one great chimney in the canopy-roof, and ſeveral leſſer ones, to let out the ſmoke, and a large pair of ſmith's bellows are ſo fixed as to be eaſily uſed whenever there is occaſion. Upon the whole, it is a noble and commodious ſtructure; and being plaſtered white, is a uſeful day-mark to all ſhips coming from the ſouthward. The keeper of this light-houſe has a ſalary from the Trinity-houſe at Deptford of 40 l. a year, with a dwelling-houſe and ground for a garden. His aſſiſtant has 20 l. a-year. It is ſupplied with coals by an annual ſhip; and the carriage of theſe coals from the ſea ſide to the light-houſe is looked on as a conſiderable benefit to the poor inhabitants. They have a neat little church, built by the Godolphin family. There are at preſent 50 houſeholds in the iſland, which yield the proprietor 40 l. a-year. Scilly.

Brehar, or, as pronounced, *Bryer iſland*, lies north-weſt of St Mary's, and to the weſt of Treſcaw, to which, when the ſea is very low, they ſometimes paſs over the ſand. It is very mountainous, abounds with ſea and land fowls, excellent ſamphire, and a great variety of medical herbs. There are at preſent thirteen families, who have a pretty church, and pay 30 l. a-year to the proprietor.

South from hence, and weſt from Treſcaw, ſtands the iſland of *Sampſon*, in which there is not above one family, who ſubſiſt chiefly by the making of kelp. To the weſtward of theſe there lie four iſlands, which contain in the whole 360 acres of meadow and arable land. The *eaſtern iſles*, ſo denominated from their poſition in reſpect to St Mary's, contain 123 acres; and there are alſo ſeven other rocky and ſcattered iſlands, that have each a little land of ſome uſe; and beſides theſe, innumerable rocks on every ſide, among which we muſt reckon *Scilly*, now nothing more than a large, ill-ſhaped, craggy, inacceſſible iſland, lying the fartheſt north-weſt of any of them, and conſequently the neareſt to the continent.

The air of theſe iſlands is equally mild and pure; their winters are ſeldom ſubject to froſt or ſnow. When the former happens, it laſts not long; and the latter never lies upon the ground. The heat of their ſummers is much abated by ſea-breezes. They are indeed frequently incommoded by ſea fogs, but theſe are not unwholeſome. Agues are rare, and fevers more ſo. The moſt fatal diſtemper is the ſmall-pox; yet thoſe who live temperately ſurvive commonly to a great age and are remarkably free from diſeaſes

We muſt now paſs to the ſea, which is of more conſequence to theſe iſles than that ſmall portion of land which is diſtributed amongſt them. St Mary's harbour is very ſafe and capacious, having that iſland on the ſouth; the eaſtern iſlands, with that of St Martin, on the eaſt; Treſcaw, Brehar, and Samſon, to the north; St Agnes and ſeveral ſmall iſlands to the weſt. Ships ride here in three to five fathom water, with good anchorage. Into this harbour there are four inlets, viz. Broad Sound, Smith's Sound, St Mary's Sound, and Crow Sound: ſo that hardly any wind can blow with which a ſhip of 150 tons cannot ſafely ſail through one or other of them, Crow Sound only excepted, where they cannot paſs at low water, but at high there is from 16 to 24 feet in this paſſage. Beſides theſe there are two other harbours; one called *New Grynſey*, which lies between Brehar and Treſcaw, where ſhips of 300 tons may ride ſecurely. The other is called *Old Grynſey*, and lies between Treſcaw, St Helen's, and Tneon, for ſmaller ſhips. The former is guarded by the batteries at Oliver's Caſtle; the latter by the Blockhouſe, on the eaſtern ſide of Treſcaw, called *Dover*. Small coaſters bound to the northward have more convenient outlets from theſe little harbours than from St Mary's, where, at the weſt end of Hugh Town, there is a fine pier built by the preſent earl of Godolphin, 430 feet long, 20 feet wide in the narroweſt part, and 23 in height, with 16 feet of water at a ſpring, and 10 at a neap tide; ſo that under the ſhelter of this pier, veſſels of 150 tons may lie ſecurely, not only cloſe to the quay, but all along the ſtrand of the town.

In.

Scilly. In this harbour, and in all the little coves of the everal iſles, prodigious quantities of mackarel may be ſeaught in their ſeaſon; alſo ſoal, turbot, and plaiſe, remarkably good in their kind; and ling, which from its being a thicker fiſh, mellower, and better fed, is very juſtly preferred to any caught nearer the Britiſh coaſts. Salmon, cod, pollock, are in great plenty, and pilchards in vaſt abundance. To theſe we may add the alga marina, fucus, or ore-weed, which ſerves to feed both their ſmall and great cattle, manures their lands, is burned into kelp, is of uſe in phyſic, is ſometimes preſerved, ſometimes pickled, and is in many other reſpects very beneficial to the inhabitants, of whom we are next to ſpeak. Scilly.

The people of Scilly in general are robuſt, handſome, active, hardy, induſtrious, generous, and good-natured; ſpeak the Engliſh language with great propriety; have ſtrong natural parts (though for want of a good ſchool they have little education), as appears by their dexterity in the ſeveral employments to which they are bred. They cultivate moſt of their lands as well as can be expected under their preſent circumſtances. They are bred from their infancy to the management of their boats, in which they excel; are good fiſhermen, and excellent pilots. Their women are admirable houſewives, ſpin their own wool, weave it into coarſe cloth, and knit ſtockings. They have no timber of their own growth, and not much from England; yet they have many joiners and cabinet-makers, who, out of the fine woods which they obtain from captains of ſhips who put in here, make all kinds of domeſtic furniture in a very neat manner. They are free from the land-tax, malt-tax, and exciſe; and being furniſhed with plenty of liquors from the veſſels which are driven into their roads for refreſhment, for neceſſary repairs, or to wait for a fair wind, in return for proviſions and other conveniences; this, with what little fiſh they can cure, makes the beſt part of their trade, if we except their kelp, which has been a growing manufacture for theſe fourſcore years, and produces at preſent about 500 l. per annum.

As to the civil government, it is adminiſtered by what is called the *Court of Twelve*; in which the commander in chief, the proprietor's agent, and the chaplain, have their ſeats in virtue of their offices: the other nine are choſen by the people. Theſe decide, or rather compromiſe, all differences; and puniſh ſmall offences by fines, whippings, and the ducking ſtool: as to greater enormities, we may conclude they have not been hitherto known; ſince, except for the ſoldiers, there is no priſon in the iſlands. But in caſe of capital offences, the criminals may be tranſported to the county of Cornwall, and there brought to juſtice.

The great importance of theſe iſlands ariſes from their advantageous ſituations, as locking equally into St George's Channel, which divides Great Britain from Ireland, and the Engliſh Channel, which ſeparates Britain from France. For this reaſon, moſt ſhips bound from the ſouthward ſtrive to make the Scilly iſlands, in order to ſteer their courſe with greater certainty. It is very convenient alſo for veſſels to take ſhelter amongſt them; which prevents their being driven to Milford Haven, may ſometimes into ſome port in Ireland, if the wind is ſtrong at eaſt; or, if it blows hard at north-weſt, from being forced back into ſome of the Corniſh harbours, or even on the French coaſts. If the wind ſhould not be very high, yet if unfavourable or unſteady, as between the channels often happens, it is better to put into Scilly, than to beat about at ſea in bad weather. The intercourſe between theſe two channels is another motive why ſhips come in here, as chooſing rather to wait in ſafety for a wind, than to run the hazard of being blown out of their courſe; and therefore a ſtrong gale at eaſt ſeldom fails of bringing thirty or forty veſſels, and frequently a larger number, into Scilly; not more to their own ſatisfaction than to that of the inhabitants. Ships homeward-bound from America often touch there, from the deſire of making the firſt land in their power, and for the ſake of refreſhment. Theſe reaſons have an influence on other ſhips, as well as Britiſh; and afford the natives an opportunity of ſhowing their wonderful dexterity in conducting them ſafely into St Mary's harbour, and, when the wind ſerves, through their ſounds. Upon firing a gun and making a waft, a boat immediately puts off from the neareſt iſland, with ſeveral pilots on board; and having with amazing activity dropped one of them into every ſhip, till only two men are left in the boat, theſe return again to land, as the wind and other circumſtances direct, in one of their little coves.

Reſpecting a current which often prevails to the weſtward of Scilly, Mr Rennel has publiſhed ſome obſervations of much importance. "It is a circumſtance (ſays he) well known to ſeamen, that ſhips, in coming from the Atlantic, and ſteering a courſe for the Britiſh channel, in a parallel ſomewhat to the ſouth of the Scilly iſlands, do notwithſtanding often find themſelves to the north of thoſe iſlands; or, in other words, in the mouth of St George's or of the Briſtol channel. This extraordinary error has paſſed for the effects either of bad ſteerage, bad obſervations of latitude, or the indraught of the Briſtol channel: but none of theſe account for it ſatisfactorily; becauſe, admitting that at times there may be an indraught, it cannot be ſuppoſed to extend to Scilly; and the caſe has happened in weather the moſt favourable for navigating and for taking obſervations. The conſequences of this deviation from the intended tract have very often been fatal; particularly in the loſs of the Nancy packet in our own times, and that of Sir Cloudeſley Shovel and others of his fleet at the beginning of the preſent century. Numbers of caſes, equally melancholy, but of leſs celebrity, have occurred; and many others, in which the danger has been imminent, but not fatal, have ſcarcely reached the public ear. All of theſe have been referred to accident; and therefore no attempt ſeems to have been made to inveſtigate the cauſe of them.

"I am, however, of opinion, that they may be imputed to a ſpecific cauſe; namely, a current: and I ſhall therefore endeavour to inveſtigate both that and its effects, that ſeamen may be apprized of the times when they are particularly to expect it in any conſiderable degree of ſtrength; for then only it is likely to occaſion miſchief, the current that prevails at ordinary times being probably too weak to produce an error in the reckoning, equal to the difference of parallel between the ſouth part of Scilly and the tract in which a commander, prudent in his meaſures, but unſuſpicious of a current, would chooſe to ſail."

The original cauſe of this current is the prevalence of weſterly winds in the Atlantic, which impel the waters along the north coaſt of Spain, and accumulate

Scilly. them in the Bay of Biſcay; whence they are projected along the coaſt of France, in a direction north-weſt by weſt to the weſt of Scilly and Ireland. The major aſſigns ſtrong reaſons for the exiſtence of this current between Uſhant and Ireland, in a chart of the tracts of the Hector and Atlas, Eaſt India ſhips, in 1778 and 1787. The following remarks on the effect of this current are abridged from the author's work, which is well worthy the peruſal of all failors and ſhipmaſters.

1ſt, If a ſhip croſſes it obliquely, that is, in an eaſt by ſouth or more ſoutherly direction, ſhe will continue much longer in it, and of courſe be more affected by it, than if ſhe croſſed it more directly. The ſame conſequence will happen if ſhe croſſes it with light winds. 2dly, A good obſervation of latitude at noon would be thought a ſufficient warrant for running eaſtward during a long night; yet as it may be poſſible to remain in the current long enough to be carried from a parallel, which may be deemed a very ſafe one, to that of the rocks of Scilly, it would appear prudent, after experiencing a continuance of ſtrong weſterly winds in the Atlantic, and approaching the Channel with light ſouthery winds, either to make Uſhant in time of peace, or at all events to keep in the parallel of 48° 45′ at the higheſt. 3dly, Ships bound to the weſtward, from the mouth of the Channel, with the wind in the ſouth weſt quarter, ſhould prefer the larboard tack. 4thly, Major Rennel approves the deſign of removing the lighthouſe of Scilly (if it be not already moved) to the ſouth-weſt part of the high rocks. 5thly, He recommends the ſending a veſſel, with time-keepers on board, to examine the ſoundings between the parallels of Scilly and Uſhant; from the meridian of the Lizard Point as far weſt as the moderate depths extend. A ſet of time-keepers, he obſerves, will effect more in one ſummer, in ſkilful hands, than all the ſcience of Dr Halley could do in the courſe of a long life.

In time of war, the importance of theſe iſlands is ſtill more conſpicuous; and it is highly probable, that they afforded the allies a place for aſſembling their fleet, when the Britons, Danes, Scots, and Iriſh, ſailed under the command of Anlaff, to attack King Athelſtan; which convinced him of the neceſſity of adding them to his dominions. Upon the like principle, Henry VIII. when upon bad terms with his neighbours, cauſed an old fortreſs to be repaired; and Queen Elizabeth, who had more to fear, directed the conſtruction of a caſtle, which, in part at leaſt, ſtill remains. But the moſt ſingular inſtance of the detriment that might ariſe from theſe iſlands falling into other hands than Britiſh happened in 1651, when Sir John Grenville took ſhelter in them with the remains of the Corniſh cavaliers. For the depredations committed by his frigates ſoon made it evident that Scilly was the key of the Engliſh commerce; and the clamours of the merchants thereupon roſe ſo high, that the parliament were forced to ſend a fleet of fifty ſail, with a great body of land-forces on board, under Sir George Ayſcue and admiral Blake, who with great difficulty, and no inconſiderable loſs, made themſelves maſters of Treſcaw and Brehar; where they erected thoſe lines and fortifications near the remains of the old fortreſs that are called *Oliver's Caſtle*. But at length, finding that little was to be done in that way, they choſe to grant Sir John Grenville a moſt honourable capitulation, as the ſureſt means to recover places of ſuch conſequence: with which the parliament were very little ſatisfied, till Mr Blake gave them his reaſons; which appeared to be ſo well founded, that they directed the articles he had concluded to be punctually carried into execution.

Scio ‖ Sciopp'us.

SCIO, or CHIO, a celebrated iſland of the Archipelago (ſee CHIO.) It is 32 miles long and 15 broad, is a mountainous but very pleaſant country. The principal mountain, called anciently *Pelineus*, preſents to view a long lofty range of bare rock, reflecting the ſun; but the receſſes at its feet are diligently cultivated, and reward the huſbandman by their rich produce. The ſlopes are clothed with vines. The groves of lemon, orange, and citron-trees, regularly planted, at once perfume the air with the odour of their bloſſoms, and delight the eye with their golden fruit. Myrtles and jaſmines are interſperſed, with olive and palm-trees, and cypreſſes. Amid theſe the tall minarets riſe, and white houſes glitter, dazzling the beholder. The inhabitants export a large quantity of pleaſant wine to the neighbouring iſlands, but their principal trade is in ſilks. They have alſo a ſmall commerce in wool, cheeſe, figs, and maſtic. The women are better bred than in other parts of the Levant; and though the dreſs is odd, yet it is very neat. The partridges are tame, being ſent every day into the fields to get their living, and in the evening are called back with a whiſtle. The town called *Scio* is large, pleaſant, and the beſt built of any in the Levant, the houſes being beautiful and commodious, ſome of which are terraſſed, and others covered with tiles. The ſtreets are paved with flint ſtones; and the Venetians, while they had it in their poſſeſſion, made a great many alterations for the better. The caſtle is an old citadel built by the Genoeſe, in which the Turks have a garriſon of 1400 men. The harbour of Scio is the rendezvous of all ſhipping that goes to or comes from Conſtantinople, and will hold a fleet of fourſcore veſſels. They reckon there are 10,000 Turks, 100,000 Greeks, and 10,000 Latins, on this iſland. The Turks took it from the Venetians in 1695. Scio is a biſhop's ſee, and is ſeated on the ſea-ſide, 47 miles weſt of Smyrna, and 210 ſouth-weſt of Conſtantinople.

There are but few remains of antiquity in this place. "The moſt curious of them (ſays Dr Chandler) is that which has been named without reaſon the *School of Homer*. It is on the coaſt at ſome diſtance from the city northward, and appears to have been an open temple of Cybele, formed on the top of a rock. The ſhape is oval, and in the centre is the image of the goddeſs, the head and an arm wanting. She is repreſented, as uſual, ſitting. The chair has a lion carved on each ſide, and on the back. The area is bounded by a low rim or ſeat, and about five yards over. The whole is hewn out of the mountain, is rude, indiſtinct, and probably of the moſt remote antiquity. From the ſlope higher up is a fine view of the rich vale of Scio, and of the channel, with its ſhining iſlands, beyond which are the mountains on the mainland of Aſia."

SCIOPPIUS (Gaſpar), a learned German writer of the 17th century, was born at Neumark in the Upper Palatinate on the 27th of May 1576. He ſtudied at the univerſity with ſo much ſucceſs, that at the age of 16 he became an author; and publiſhed books, ſays Ferrari, which deſerved to be admired by old men. His diſpoſitions did not correſpond with his genius. Naturally paſſionate and malevolent, he aſſaulted without

mercy

Scioppius. mercy the character of eminent men. He abjured the ſyſtem of the Proteſtants, and became a Roman catholic about the year 1599; but his character remained the ſame. He poſſeſſed all thoſe qualities which fitted him for making a diſtinguiſhed figure in the literary world; imagination, memory, profound learning, and invincible impudence. He was familiar with the terms of reproach in moſt of the languages. He was entirely ignorant of the manners of the world. He neither ſhowed reſpect to his ſuperiors, nor did he behave with decency to his equals. He was poſſeſſed with a frenzy of an uncommon kind: he was indeed a perfect firebrand, ſcattering around him, as if for his amuſement, the moſt atrocious calumnies. Joſeph Scaliger, above all others, was the object of his ſatire. That learned man, having drawn up the hiſtory of his own family, and deduced its genealogy from princes, was ſeverely attacked by Scioppius, who ridiculed his high pretenſions. Scaliger in his turn wrote a book intitled The Life and Parentage of Gaſper Scioppius, in which he informs us, that the father of Scioppius had been ſucceſſively a grave-digger, a journeyman ſtationer, a hawker, a ſoldier, a miller, and a brewer of beer. We are told that his wife was long kept as a miſtreſs, and at length forſaken by a debauched man whom ſhe followed to Hungary, and obliged to return to her huſband; that then he treated her harſhly, and condemned her to the loweſt offices of ſervitude. His daughter too, it is ſaid, was as diſorderly as her mother: that after the flight of her huſband, who was going to be burned for ſome infamous crimes, ſhe became a common proſtitute; and at length grew ſo ſcandalous, that ſhe was committed to priſon. Theſe ſevere accuſations againſt the family of Scioppius inflamed him with more eagerneſs to attack his antagoniſt anew. He collected all the calumnies that had been thrown out againſt Scaliger, and formed them into a huge volume as if he had intended to cruſh him at once. He treated with great contempt the King of England, James I. in his *Ecclefiaſticus*, &c. and in his *Corvum Regem Britannicæ Regi gravidæ ex ovidi laborandi incommodo*; that is, "An Eye-falve for his Britannic Majeſty." In one of his works he had the audacity to abuſe Henry IV. of France in a moſt ſcurrilous manner, on which account his book was burned at Paris. He was hung in effigy in a farce which was repreſented before the Court of England, but he gloried in his baſeneſs. Provided with his innocence to their ſovereign, the ſervants of the Engliſh ambaſſador aſſaulted him at Madrid, and courted him ſeverely; but he boaſted of the wounds he had received. He publiſhed more than thirty different books againſt the Jeſuits; and, what is very ſurprizing, in the very place where he denounces with moſt violence againſt that Society, he ſubſcribes his own name with expreſſions of piety. *I Gaſper Scioppius, already on the brink of the grave, and ready to appear before the tribunal of Jeſus Chriſt to give an account of my words.* Towards the end of his life he employed himſelf in explaining the Apocalypſe, and affirmed that he had found the key to that myſterious book. He ſent a copy of his explication to Cardinal Mazarine, but the cardinal did not find it convenient to read them.

Ferrari tells us, that during the laſt fourteen years of his life he ſhut himſelf up in a ſmall apartment, where he devoted himſelf ſolely to ſtudy. The ſame writer acquaints us, that he could repeat the Scriptures almoſt entirely by heart; but his good qualities were eclipſed by his vices. For his love of ſlander, and the furious aſſaults which he made upon the moſt eminent men, he was called the *Cerberus of literature*. He accuſes even Cicero of barbariſms and improprieties. He died on the 19th November 1649, at the age of 74, at Padua, the only retreat which remained to him from the multitude of enemies whom he had created. Four hundred books are aſcribed to him, which are ſaid to diſcover great genius and learning. The chief of theſe are, 1. *Verſificum Libri* IV. 1596, in 8vo. 2. *Commentarius de arte critica*, 1661, in 8vo. 3 *De ſua ad Catholicos migratione*, 1610, in 8vo. 4. *Notationes Criticæ in Plautum, in Priapia Patavii*, 1664, in 8vo. 5 *Suſpectarum Lectionum Libri* V. 1664, in 8vo. 6. *Claſſicum belli ſacri*, 1619, in 4to. 7. *Calyciana regium*, 1611, in 8vo. 8. *Grammatica Philoſophica*, 1644, in 8vo. 9. *Relatio ad Reges et Principes de Strategematicis et Societate Jeſu*, 1641, in 12mo. This laſt mentioned book was publiſhed under the name of *Alphonſi de Vargas*. He was at firſt well diſpoſed to the Jeſuits; but theſe fathers on one occaſion oppoſed him. He preſented a petition to the diet of Ratiſbonne in 1630, in order to obtain a penſion; but the Jeſuits, who were the confeſſors both of the emperor and the electors, had influence to prevent the petition from being granted. From that moment Scioppius turned his whole artillery againſt the Jeſuits.

SCIPIO (Publius Cornelius), a renowned Roman general, ſurnamed *Africanus*, for his conqueſts in that country. His other ſignal military exploits were, his taking the city of New Carthage in a ſingle day; his complete victory over Hannibal, the famous Carthaginian general; the defeat of Syphax king of Numidia, and of Antiochus in Aſia. He was as eminent for his chaſtity, and his generous behaviour to his priſoners, as for his valour. He died 180 B. C. aged about 51.

SCIPIO (Lucius Cornelius), his brother, ſurnamed *Aſiaticus*, for his complete victory over Antiochus at the battle of Magneſia, in which Antiochus loſt 50,000 infantry and 4000 cavalry. A triumph, and the ſurname of *Aſiaticus*, were the rewards of his valour. Yet his ungrateful countrymen accuſed him, as well as his brother, of peculation; for which he was fined: but the public face of his affairs proved the falſehood of the charge; for they did not produce the amount of the fine. He flouriſhed about 190 B. C.

SCIPIO (Publius Æmilianus), was the ſon of Paulus Æmilius; but being adopted by Scipio Africanus, he was called *Scipio Africanus junior*. He ſhowed himſelf worthy of ſo great a father, by following the ſteps of Scipio Africanus, whom he equalled in military fame and public virtue. His chief victories were the conqueſt of Carthage and Numantia; Yet theſe ſignal ſervices to his country could not protect him from an untimely fate. He was ſtrangled in his bed by order of the Decemviri, who dreaded his popularity, 129 B. C. aged 56.

SCIRO, an iſland of the Archipelago, to the weſt of Myconi, to the north-eaſt of Negropont, and to the ſouth-eaſt of Scanderoni. It is 15 miles in length, and 8 in breadth. It is a mountainous country, but has no mines. The vines make the beauty of the land, and the wine is excellent; nor do the natives want

Sirocho || Sciurus.

wood. There is but one village; and that is built on a rock, which runs up like a ſugar loaf, and is 10 miles from the harbour of St George. The inhabitants are all Greeks, the cadi being the only Turk among them.

SCIROCHO, or SIROCHO, a name generally given in Italy to every unfavourable wind. In the ſouth-weſt it is applied to the hot ſuffocating blaſts from Africa, and in the north-eaſt it means the cold bleak winds from the Alps.

SCIRPUS, in botany: A genus of the monogynia order, belonging to the triandria claſs of plants; and in the natural method ranking under the 3d order, *Calamariæ*. The glumes are paleaceous, and imbricated all round. There is no corolla; and only one beardleſs ſeed.

SCIRRHUS, in ſurgery and medicine, a hard tumor of any part of the body, void of pain, ariſing, as is ſuppoſed, from the inſpiſſation and induration of the fluids contained in a gland, though it may alſo appear in any other part of the body, eſpecially in the fat; being one of the ways in which an inflammation terminates. Theſe tumors are exceedingly apt to degenerate into cancers.

SCITAMINEÆ. See BOTANY, p. 459.

SCIURUS, the SQUIRREL; a genus of quadrupeds belonging to the order of glires. It has two fore-teeth in each jaw, the ſuperior ones ſhaped like wedges, and the inferior ones compreſſed. There are 11 ſpecies; of which the moſt remarkable are,

1. The *vulgaris*, or common ſquirrel, with ears terminated with long tufts of hair; large, lively, black eyes; head, body, legs, and tail, of a bright reddiſh brown; breaſt and belly white; hair on each ſide the tail lies flat. In Sweden and Lapland, it changes in winter into grey. In Ruſſia it is ſometimes found black. In many parts of England there is a beautiful variety, with milk white tails.—This ſpecies inhabits Europe and North America, the northern and the temperate parts of Aſia: and a variety is even found as far ſouth as the iſle of Ceylon. It is a neat, lively, active animal; lives always in woods: in the ſpring, the female is ſeen purſued from tree to tree by the males, feigning an eſcape from their embraces; makes its neſt of moſs and dried leaves between the fork of two branches; brings three or four young at a time; has two holes to its neſt; ſtops up that on the ſide the wind blows, as Pliny juſtly remarks; lays in a hoard of winter proviſion, ſuch as nuts, acorns, &c.; in ſummer, feeds on buds and young ſhoots; is particularly fond of thoſe of fir, and the young cones; ſits up to eat, and uſes its fore-feet as hands; covers itſelf with its tail; leaps to a ſurpriſing diſtance; when diſpoſed to croſs a river, a piece of bark is its boat, its tail the ſail; is in great plenty in Dunmallet, and there called *Conn*. Boys frequently nurſe this beautiful and active animal under cats. "There are three creatures, the ſquirrel, the field-mouſe, and the bird called the *nuthatch*, which live much on hazel nuts; and yet they open them each in a different way. The firſt, after raſping off the ſmall end, ſplits the ſhell in two with his long fore-teeth, as a man does with his knife; the ſecond nibbles a hole with his teeth, ſo regular as if drilled with a wimble, and yet ſo ſmall, that one would wonder how the kernel can be extracted through it; while the laſt pecks an irregular ragged hole with its bill; but as this artiſt has no paws to hold the nut firm while he pierces it, like an adroit workman, he fixes it, as it were, in a vice, in ſome cleft of a tree, or in ſome crevice; when, ſtanding over it, he perforates the ſtubborn ſhell. While at work, they make a rapping noiſe, that may be heard at a conſiderable diſtance." *White's Selborne*. Sciurus.

2. The *cinereus*, or grey ſquirrel, with plain ears; hair of a dull grey colour, mixed with black, and often tinged with dirty yellow; belly and inſides of the legs white; tail long, buſhy, grey, and ſtriped with black: ſize of a half-grown rabbit.—Inhabits the woods of Northern Aſia, North America, Peru, and Chili. They are very numerous in North America, do incredible damage to the plantations of maize, run up the ſtalks and eat the young ears. Deſcend in vaſt flocks from the mountains, and join thoſe that inhabit the lower parts; were proſcribed by the provinces, and a reward of three-pence per head given for every one that is killed. Such a number was deſtroyed one year, that Pennſylvania alone paid in rewards L. 8000 of its currency. Make their neſts in hollow trees, with moſs, ſtraw, wool, &c. Feed on maize in the ſeaſon, and on pine-cones, acorns, and maſts of all kinds: form holes under-ground, and there depoſit a large ſtock of winter proviſion. Deſcend from the trees, and viſit their magazines when in want of meat; are particularly buſy at the approach of bad weather; during the cold ſeaſon keep in their neſt for ſeveral days together; ſeldom leap from tree to tree, only run up and down the bodies; their hoards often deſtroyed by ſwine; when their magazines are covered with deep ſnow, the ſquirrels often periſh for want of food; are not eaſily ſhot, nimbly changing their place when they ſee the gun levelled; have the actions of the common ſquirrel; are eaſily tamed; and their fleſh is eſteemed very delicate. Their furs, which are exported under the name of *petit-gris*, are valuable, and uſed as linings to cloaks. Plate CCCCXLV. fig. 1.

3. The *niger*, or black ſquirrel, with plain ears; ſometimes wholly black, but often marked with white on the noſe, the neck, or end of the tail; the tail ſhorter than that of the former; the body equal. It inhabits the north of Aſia, North America, and Mexico; breeds and aſſociates in ſeparate troops; is equally numerous with the former; commits as great ravages among the maize; makes its neſt in the ſame manner, and forms, like them, magazines for winter food. The fineſt are taken near the lake Baikal, and about Barguzinſkoi-oſtrog, upon the Upper Angara, in the diſtrict of Nertſchinſk, which are the beſt in all Siberia; theſe continue black the whole year, the others grow ruſty in ſummer.—There is a variety with plain ears; coarſe fur mixed with dirty white and black; throat and inſide of the legs and thighs black; tail much ſhorter than thoſe of ſquirrels uſually are; of a dull yellow colour, mixed with black; body of the ſize of the grey ſquirrel. It inhabits Virginia; the planters call it the *cat ſquirrel*.

4. The *flavus*, or fair ſquirrel, with the body and tail of a flaxen colour; of a very ſmall ſize, with plain round ears, and rounded tail. Inhabits the woods near Amadabad, the capital of Guzurat, in great abundance, leaping from tree to tree. Linnæus ſays it is an inhabitant of South America.

5. The *ſtriatus*, or ground ſquirrel, with plain ears; ridge

Sciurus. ridge of the back marked with a black ſtreak; each ſide with a pale yellow ſtripe, bounded above and below with a line of black; head, body, and tail, of a reddiſh brown; the tail the darkeſt: breaſt and belly white; noſe and feet pale-red; eyes full.—Inhabits the north of Aſia, but found in the greateſt abundance in the foreſts of North America. They never run up trees except they are purſued, and find no other means of eſcaping: they burrow, and form their habitations under ground, with two entrances, that they may get acceſs to the one in caſe the other is ſtopped up. Their retreats are formed with great ſkill, in form of a long gallery, with branches on each ſide, each of which terminates in an enlarged chamber, as a magazine to ſtore their winter proviſion in; in one they lodge the acorns, in another the maize, in a third the hickery nuts, and in the laſt their favourite food the chinquapin cheſnut. They very ſeldom ſtir out during winter, at leaſt as long as their proviſions laſt; but if that fails, they will dig into cellars where apples are kept, or barns where maize is ſtored, and do a great deal of miſchief; but at that time the cat deſtroys great numbers, and is as great an enemy to them as to mice. During the maize harveſt theſe ſquirrels are very buſy in biting off the ears, and filling their mouths ſo full with the corn that their cheeks are quite diſtended. It is obſervable that they give great preference to certain food; for if, after filling their mouths with rye, they happen to meet with wheat, they fling away the firſt, that they may indulge in the laſt. They are very wild, bite ſeverely, and are ſcarcely ever tamed; the ſkins are of little uſe, but are ſometimes uſed to line cloaks.

6. The *glis*, or fat ſquirrel, with thin naked ears; body covered with ſoft aſh-coloured hair; belly whitiſh; tail full of long hair: from noſe to tail, near ſix inches; tail, four and a half: thicker in the body than the common ſquirrel.—Inhabits France and the ſouth of Europe; lives in trees, and leaps from bough to bough; feeds on fruits and acorns; lodges in the hollows of trees; remains in a torpid ſtate during winter, and grows very fat. It was eſteemed a great delicacy by the Romans, who had their gliraria, places conſtructed to keep and feed them in.

Fig. 2. 7. The *ſagitta*, or arrow ſquirrel, with a ſmall round head, cloven upper lip: ſmall blunt ears, two ſmall warts at the utmoſt corner of each eye, with hairs growing out of them: neck ſhort: four toes on the fore feet; and inſtead of a thumb, a ſlender bone two inches and a half long, lodged under the lateral membrane, ſerving to ſtretch it out: from thence to the hind legs extends the membrane, which is broad, and a continuation of the ſkin of the ſides and belly: there are five toes on the hind feet; and on all the toes, ſharp compreſſed bent claws: the tail is covered with long hairs diſpoſed horizontally; colour of the head, body, and tail, a bright bay; in ſome parts inclining to orange: breaſt and belly of a yellowiſh white: length from noſe to tail, eighteen inches; tail, fifteen.—Inhabits Java, and others of the Indian iſlands: leaps from tree to tree as if it flew: will catch hold of the boughs with its tail. Niewhoff, p. 354. deſcribes this under the name of the flying cat, and ſays the back is black.

8. The *volans*, or flying ſquirrel, with round naked ears, full black eyes, and a lateral membrane from the fore to the hind legs: tail with long hairs diſpoſed horizontally, longeſt in the middle: its colour above, a brownish aſh; beneath, white tinged with yellow: much leſs than the common ſquirrel. Labadors Labrador, Lapland, Poland, Ruſſia, North America, and New Spain: lives in hollow trees: ſleeps in the day: during the night is very lively: is gregarious, numbers being found in one tree: leaps from bough to bough ſometimes at the diſtance of ten yards; this action has improperly been called flying, for the animal cannot go in any other direction than forward; and even then cannot keep an even line, but ſinks conſiderably before it can reach the place it aims at: ſenſible of this, the ſquirrel mounts the higher in proportion to the diſtance it wiſhes to reach: when it would leap, it ſtretches out the forelegs, and extending the membranes becomes ſpecifically lighter than it would otherwiſe be, and thus is enabled to ſpring further than other ſquirrels that have not this apparatus. When numbers leap at a time, they ſeem like leaves blown off by the wind. Their food the ſame as the other ſquirrels. They are eaſily tamed: bring three or four young at a time. See fig. 3 & 4, the one repreſenting the animal in what is called a *flying*, the other in a *ſitting*, poſture.

SCIURUS, in botany: A genus of the monogynia order, belonging to the diandria claſs of plants; and in the natural method ranking with thoſe that are doubtful. The calyx is quinquedentate; the corolla bilabiated; the filaments are barren; the capſules five, and joined together; bivalved, unilocular, with one ſeed. Of this there is one ſpecies, viz. *aromatica*, a native of Guiana.

SCLAVONIA, a country of Europe, between the rivers Save, the Drave, and the Danube. It is divided into ſix counties, viz. Poſegra, Zabrab, Creis, Waraſden, Zreim, and Walpon, and belongs to the houſe of Auſtria. It was formerly called a *kingdom*; and is very narrow, not being above 75 miles in breadth; but it is 300 in length, from the frontiers of Auſtria to Belgrade. The eaſtern part is called *Ratzia*, and the inhabitants *Ratzians*. Theſe, from a particular notion, are of the Greek church. The language of Sclavonia is the mother of four others, namely, thoſe of Hungary, Bohemia, Poland, and Ruſſia.

SCLERANTHUS, in botany: A genus of the digynia order, belonging to the dodecandria claſs of plants, and in the natural method ranking under the 22d order, *Caryophyllei*. The calyx is monophyllous; there is no corolla; there are two ſeeds contained in the calyx.

SCLERIA, in botany: A genus of the tetrandria order, belonging to the monœcia claſs of plants; and in the natural method ranking under the 4th order, *Gramina*. The calyx has a gluma, with from two to ſix valves; the flowers numerous; the ſeed a ſort of nut, ſmall, oblong, and ſhining. There are ſix ſpecies, all of them natives of the Weſt Indies.

SCLEROTICS, medicines proper to harden and conſolidate the fleſh of the parts to which they are applied; as purſlain, houſe-leek, flea-wort, garden nightſhade, &c.

SCOLOPAX, in ornithology, a genus belonging to the order of grallæ. The back is cylindrical, obtuſe, and longer than the head; the noſtrils are linear; the face is covered; and the feet have four toes. There are 18 ſpecies; of which the following are the principal.

Scolopax. Plate CCCCXLV.

1. The *arquata*, or curlew, frequents our ſea-coaſts and marſhes in the winter time in large flocks, walking on the open ſands; feeding on ſhells, frogs, crabs, and other marine inſects. In ſummer they retire to the mountainous and unfrequented parts of the country, where they pair and breed. Their eggs are of a pale olive colour, marked with irregular but diſtinct ſpots of pale brown. Their fleſh is very rank and fiſhy, notwithſtanding an old Engliſh proverb in its favour. Curlews differ much in weight and ſize; ſome weighing 37 ounces, others not 22: the length of the largeſt to the tip of the tail, 25 inches; the breadth, three feet five inches; the bill is ſeven inches long: the head, neck, and coverts of the wings, are of a pale brown; the middle of each feather, black; the breaſt and belly white, marked with narrow oblong black lines: the back is white, ſpotted with a few black ſtrokes: the quill-feathers are black, but the inner webs ſpotted with white; the tail is white, tinged with red, and beautifully barred with black; the legs are long, ſtrong, and of a bluiſh grey colour; the bottoms of the toes flat and broad, to enable it to walk on the ſoft mud, in ſearch of food.

2. The *phæopus*, or whimbrel, is much leſs frequent on our ſhores than the curlew; but its haunts, food, and general appearance, are much the ſame. It is obſerved to viſit the neighbourhood of Spalding (where it is called the *curlew knot*) in vaſt flooks in April, but continues there no longer than May; nor is it ſeen there any other time of the year: it ſeems at that ſeaſon to be on its paſſage to its breeding place, which Mr Pennant ſuſpects to be among the highlands of Scotland. The ſpecific difference is the ſize; this never exceeding the weight of 12 ounces.

3. The *ruſticola*, or woodcock, during ſummer inhabits the Alps of Norway, Sweden, Poliſh Pruſſia, the march of Brandenburg, and the northern parts of Europe: they all retire from thoſe countries the beginning of winter, as ſoon as the froſts commence; which force them into milder climates, where the ground is open, and adapted to their manner of feeding. They live on worms and inſects, which they ſearch for with their long bills in ſoft grounds and moiſt woods.—Woodcocks generally arrive here in flocks, taking advantage of the night or a miſt: they ſoon ſeparate; but before they return to their native haunts, pair. They feed and fly by night; beginning their flight in the evening, and return the ſame way or through the ſame glades to their day retreat. They leave England the latter end of February, or beginning of March; not but they have been known to continue there accidentally. Theſe birds appear in Scotland firſt on the eaſtern coaſts, and make their progreſs from eaſt to weſt. They do not arrive in Breadalbane, a central part of the kingdom, till the beginning or middle of November; nor the coaſts of Nether Lorn, or of Roſsſhire, till December or January: they are very rare in the remote Hebrides, and in the Orkneys. A few ſtragglers now and then arrive there. They are equally ſcarce in Caithneſs This ſpecies of woodcock is unknown in North America: but a kind is found that has the general appearance of it; but is ſcarce half the ſize, and wants the bars on the breaſt and belly. The weight of the woodcock is uſually about 12 ounces; the length near 14 inches; and the breadth, 26; the bill is three inches long, duſky towards the end, reddiſh at the baſe; tongue ſlender, long, ſharp, and hard at the point; the eyes large, and placed near the top of the head, that they may not be injured when the bird thruſts its bill into the ground; from the bill to the eyes is a black line; the fore-head is a reddiſh aſh colour; the crown of the head, the hind part of the neck, the back, the coverts of the wings, and the ſcapulars, are prettily barred with a ferruginous red, black, and grey; but on the head the black predominates: the quill feathers are duſky, indented with red marks. The chin is of a pale yellow; the whole under ſide of the body is of a dirty white, marked with numerous tranſverſe lines of a duſky colour. The tail conſiſts of 12 feathers, duſky or black on the one web, and marked with red on the other; the tips above, are aſh-coloured, below white; which, when ſhooting on the ground was in vogue, was the ſign the fowler diſcovered the birds by. The legs and toes are livid; the latter divided almoſt to their very origin, having only a very ſmall web between the middle and interior toes; as thoſe of the two ſpecies of ſnipes found in England. Scolopax.

4. The *ægocephala*, or godwit, weighs 12 ounces and a half; the length is 16 inches; the breadth 27; the bill is four inches long, turns up a little, black at the end, the reſt a pale purple; from the bill to the eye is a broad white ſtroke; the feathers of the head, neck, and back, are of a light reddiſh brown, marked in the middle with a duſky ſpot; the belly and vent feathers white, the tail regularly barred with black and white. The ſix firſt quill-feathers are black; their interior edges of a reddiſh brown; the legs in ſome are duſky, in others of a greyiſh blue, which perhaps may be owing to different ages; the exterior toe is connected as far as the firſt joint of the middle toe with a ſtrong ſerrated membrane. The male is diſtinguiſhed from the female by ſome black lines on the breaſt and throat; which in the female are wanting. Theſe birds are taken in the fens, in the ſame ſeaſon and in the ſame manner with the ruffs and reeves †; and when fattened are eſteemed a great delicacy, and ſell for half a crown or five ſhillings a piece. A ſtale of the ſame ſpecies is placed in the net. They appear in ſmall flocks on our coaſts in September, and continue with us the whole winter they walk on the open ſands like the curlew, and feed on inſects.

† See Tringa.

5. The *glottis*, or greenſhank, is in length to the end of the tail, 14 inches; to that of the toes, 20; its breadth, 25. The bill is two inches and a half long; the upper mandible black, ſtraight, and very ſlender; the lower reflects a little upwards; the head and upper part of the neck are aſh-coloured, marked with ſmall duſky lines pointing down; over each paſſes a white line; the coverts, the ſcapulars, and upper part of the back, are of a browniſh aſh-colour; the quill-feathers duſky, but the inner webs ſpeckled with white; the breaſt, belly thighs and lower part of the back, are white; the tail is white, marked with undulated duſky bars; the inner coverts of the wings finely croſſed with double and treble rows of a duſky colour. It is a bird of an elegant ſhape, and ſmall weight in proportion to its dimenſions, weighing only ſix ounces. The legs are very long and ſlender, and bare above two inches higher than the knees. The exterior toe is united to the middle toe, as far as the ſecond joint, by a ſtrong mem-

Scolopax, Scolopendra.

membrane which borders their ſides to the very end.—These birds appear on the Engliſh coaſts and wet grounds in the winter-time in but ſmall numbers.

6. The *calidris*, or red-ſhank, is found on moſt of our ſhores; in the winter-time it conceals itſelf in the gutters, and is generally found ſingle or at moſt in pairs. It breeds in the fens and marſhes; and flies round its neſt when diſturbed, making a noiſe like a lapwing. It lays four eggs whitiſh tinged with olive, marked with irregular ſpots of black chiefly on the thicker end. It weighs five ounces and a half: the length is 12 inches, the breadth 21; the bill near two inches long, red at the baſe, black towards the point. The head, hind part of the neck, and ſcapulars, are of a duſky aſh-colour obſcurely ſpotted with black; the back is white, ſprinkled with black ſpots; the tail elegantly barred with black and white; the cheeks, under ſide of the neck, and upper part of the breaſt, are white, ſtreaked downward with duſky lines; the belly white; the exterior webs of the quill-feathers are duſky; the legs long, and of a fine bright orange colour; the utmoſt toe connected to the middle toe by a ſmall membrane; the inmoſt by another ſtill ſmaller.

7. The *gallinago*, or common ſnipe, weighs four ounces; the length, to the end of the tail, is near 12 inches; the breadth about 14; the bill is three inches long, of a duſky colour, flat at the end, and often rough like ſhagreen above and below. The head is divided lengthwiſe with two black lines, and three of red, one of the laſt paſſing over the middle of the head, and one above each eye: between the bill and the eyes is a duſky line; the chin is white; the neck is varied with brown and red. The ſcapulars are beautifully ſtriped lengthwiſe with black and yellow; the quill-feathers are duſky; but the edge of the firſt is white, as are the tips of the ſecondary feathers: the quill-feathers next the back are barred with black and pale red; the breaſt and belly are white; the coverts of the tail are long, and almoſt cover it; they are of a reddiſh brown colour. The tail conſiſts of 14 feathers, black on their lower part, then croſſed with a broad bar of deep orange, another narrow one of black; and the ends white, or pale orange. The vent feathers are of a dull yellow; the legs pale green; the toes divided to their origin. In the winter-time ſnipes are very frequent in all our marſhy and wet grounds, where they lie concealed in the ruſhes, &c. In ſummer they diſperſe to different parts, and are found in the midſt of the higheſt mountains as well as of the low moors; their neſt is made of dried graſs; they lay four eggs of a dirty olive colour, marked with duſky ſpots; their young are ſo often found in England, that we doubt whether they ever entirely leave that iſland. When they are diſturbed much, particularly in the breeding ſeaſons, they ſoar to a vaſt height, making a ſingular bleating noiſe; and when they deſcend, dart down with vaſt rapidity: it is alſo amuſing to obſerve the cock, while his mate ſits on her eggs, poiſe himſelf on his wings, making ſometimes a whiſtling and ſometimes a drumming noiſe. Their food is the ſame with that of the woodcock; their flight very irregular and ſwift, and attended with a ſhrill ſcream. They are moſt univerſal birds, found in every quarter of the globe, and in all climates.

SCOLOPENDRA, in zoology, a genus of inſects belonging to the order of aptera. The feet are very numerous, being as many on each ſide as there are joints in the body; the antennæ are ſetaceous: there are two jointed pappi, and the body is depreſſed.—Theſe inſects are very formidable and noxious in the warm countries, where they grow to the length of a quarter of a yard or more, though in this climate they ſeldom grow above an inch long. The ſcolopendra is alſo called the *centipes* from its number of feet. In the Eaſt Indies it grows to ſix inches in length, and as thick as a man's finger: it conſiſts of many joints; and from each joint proceeds a leg on each ſide: they are covered with hair, and ſeem to have no eyes; but there are two feelers on the head, with which they find out the way they are to paſs: the head is very round, with two ſmall ſharp teeth, with which they inflict wounds that are very painful and dangerous. A ſailor that was bit by one on board a ſhip felt exceſſive pain, and his life was ſuppoſed to be in danger; but by the application of roaſted onions to the part he recovered. The bite of the ſcolopendra *morſitans* § in Jamaica is ſaid to be as poiſonous as the ſting of a ſcorpion.—Some of the ſpecies live in holes in the earth: others under ſtones, and among rotten wood; ſo that the removing of theſe is exceedingly dangerous in the countries where the ſcolopendræ breed.—Theſe inſects, like the ſcorpion, are ſuppoſed to be produced perfect from the parent or the egg, and to undergo no changes after their firſt excluſion. They are found of all ſizes; which is a ſufficient reaſon for believing that they preſerve their firſt appearance through the whole of their exiſtence. It is probable, however, that, like moſt of this claſs, they often change their ſkins; but of this we have no certain information. The ſcolopendra forficata is the largeſt in this country, of a dun colour, ſmooth and compoſed of nine ſcaly ſegments, without reckoning the head. The feet are 15 in number on each ſide, and the laſt longer than the reſt, and turned backwards, form a kind of forky tail. The antennæ are twice the length of the head, and conſiſt of 42 ſhort ſegments. The inſect's progreſſive motion is very quick, and ſometimes ſerpentine. It is found under ſtones on the ground, under flower-pots and garden boxes.

Scolopendra. Scomber.

§ See Plate CCCCXLV.

SCOLYMUS, in botany: A genus of the polygamia æqualis order, belonging to the ſyngeneſia claſs of plants; and in the natural method ranking under the 49th order, *Compoſitæ*. The receptacle is paleaceous; the calyx imbricated and prickly, without any pappus.

SCOMBER, the MACKEREL, in ichthyology, a genus belonging to the order of thoracici. The head is ſmooth and compreſſed, and there are ſeven rays in the gill membrane. There are ten ſpecies;—of which the moſt remarkable are the following.

1. The ſcomber, or common mackerel, a ſummer-fiſh of paſſage that viſits our ſhores in vaſt ſhoals. It is leſs uſeful than other ſpecies of gregarious fiſh, being very tender, and unfit for carriage; not but that it may be preſerved by pickling and ſalting, a method, we believe, practiſed in many places, where it proves a great relief to the poor during winter. It was a fiſh greatly eſteemed by the Romans, becauſe it furniſhed the precious garum, a ſort of pickle that gave a high reliſh to their ſauces; and was beſides uſed medicinally. It was drawn from different kinds of fiſh, but that made from the mackerel had the preference: the beſt was made at

Scomber. Carthagena, vaſt quantities of mackerel being taken near an adjacent iſle, called from that circumſtance *Scombraria*, and the garum, prepared by a certain company in that city, bore a high price, and was diſtinguiſhed by the title of *garum ſociorum*. This fiſh is eaſily taken by a bait; but the beſt time is during a freſh gale of wind, which is thence called a *mackerel gale*. In the ſpring the eyes of mackerel are almoſt covered with a white film; during which period they are half blind. This film grows in winter, and is caſt the beginning of ſummer. It is not often that it exceeds two pounds in weight, yet there have been inſtances of ſome that weighed upwards of five. The noſe is taper and ſharp pointed; the eyes large; the jaws of an equal length; the teeth ſmall, but numerous. The form of this fiſh is very elegant. The body is a little compreſſed on the ſides: towards the tail it grows very ſlender, and a little angular. It is a moſt beautiful fiſh when alive; for nothing can equal the brilliancy of its colour, which death impairs, but does not wholly obliterate.

2. The thunnus, or tunny, was a fiſh well known to the ancients: it made a conſiderable branch of commerce: the time of its arrival in the Mediterranean from the ocean was obſerved, and ſtations for taking them were eſtabliſhed in places it moſt frequented.

There are ſtill very conſiderable tunny fiſheries on the coaſt of Sicily, as well as ſeveral other parts of the Mediterranean; where they are cured, and make a great article of proviſion in the adjacent kingdoms.—They are caught in nets, and amazing quantities are taken; for they come in vaſt ſhoals, keeping along the ſhores. See *Tunny-Fishery*.

They frequent the Britiſh coaſts, but not in ſhoals like the tunnies of the Mediterranean. They are not uncommon in the lochs on the weſtern coaſt of Scotland; where they come in purſuit of herrings; and often during night ſtrike into the nets, and do conſiderable damage. When the fiſhermen draw them up in the morning, the tunny riſes at the ſame time towards the ſurface, ready to catch the fiſh that drop out. On perceiving it, a ſtrong hook baited with a herring, and faſtened to a rope, is inſtantly flung out, which the tunny ſeldom fails to take. As ſoon as hooked, it loſes all ſpirit; and after a very little reſiſtance ſubmits to its fate. It is dragged to the ſhore and cut up, either to be ſold freſh to people who carry it to the country markets, or is preſerved ſalted in large caſks. The pieces, when freſh, look exactly like raw beef; but when boiled turn pale, and have ſomething of the flavour of ſalmon.

One that was taken when Mr Pennant was at Inverary in 1769, weighed 460 pounds. The fiſh was ſeven feet ten inches long: the greateſt circumference five feet ſeven; the leaſt near the tail one foot ſix. The body was round and thick, and grew ſuddenly very ſlender towards the tail, and near that part was angular. The irides were of a plain green: the teeth very minute. The tail was in form of a creſcent; and two feet ſeven inches between tip and tip. The ſkin on the back was ſmooth, very thick, and black. On the belly the ſcales were viſible. The colour of the ſides and belly was ſilvery, tinged with cærulean and pale purple: near the tail marbled with grey.

They are known on the coaſt of Scotland by the name of *mackrelſture*: *Mackrel*, from being of that genus; and *ſture*, from the Daniſh, *ſtor* "great."

Scone || Scotia. SCONE, a town of Scotland, remarkable for being the place where the kings were anciently crowned. W. Long. 3. 10. N. Lat. 56. 28. Here was once an abbey of great antiquity, which was burnt by the reformers at Dundee. Kenneth II. upon his conqueſt of the Picts in the ninth century, having made Scone his principal reſidence, delivered his laws, called the *Macalpin laws*, from a *tumulus*, named the *Mote Hill of Scone*. The preſent palace was begun by the earl of Gowrie; but was completed by Sir David Murray of Goſpatrie, the favourite of king James VI. to whom that monarch had granted it; and the new poſſeſſor in gratitude to his benefactor put up the king's arms in ſeveral parts of the houſe. It is built around two courts. The dining room is large and handſome; and has an ancient and magnificent chimney-piece, and the king's arms, with this motto:

Nobis hæc invicta miſerunt centum ſex proavi.

Beneath are the Murray arms. In the drawing room is ſome good old tapeſtry, with an excellent figure of Mercury. In a ſmall bed-chamber is a medley ſcripture-piece in needle-work, with a border of animals, pretty well done, the work of queen Mary during her confinement in Loch Leven Caſtle. The gallery is about 155 feet long, the top arched, divided into compartments filled with paintings in water-colours. The pieces repreſented are various kinds of huntings; that of Nimrod, and king James and his train, appear in every piece. Till the deſtruction of the abbey, the kings of Scotland were crowned here, ſitting in the famous wooden chair which Edward I. tranſported to Weſtminſter abbey, to the great mortification of the Scots, who looked upon it as a kind of palladium. Charles II. before the battle of Worceſter, was crowned in the preſent chapel. The old pretender reſided for ſome time at Scone in 1715; and his ſon paid it a viſit in 1745.

SCOPARIA, in botany: A genus of the monogynia order, belonging to the tetrandria claſs of plants; and in the natural method ranking under the 40th order, *Perſonatæ*. The calyx is quadripartite; the corolla the ſame, and rotaceous; the capſule unilocular, bivalved, and polyſpermous.

SCOPER, or SCUPPER HOLES, in a ſhip, are holes made through the ſides, cloſe to the deck, to carry off the water that comes from the pump.

SCOPOLIA, in botany: A genus of the octandria order, belonging to the tetrandria claſs of plants; and in the natural method ranking under the 11th claſs, *Sarmentaceæ*. The calyx is diphyllous; the corolla quadrifid; the antheræ coaleſce in two columns, one placed above the other. Of this there is only one ſpecies, viz. the *Compoſita*.

SCORBUTUS, the Scurvy. See Medicine, n° 8.

SCORDIUM, or WATER-GERMANDER, in botany, a ſpecies of Teucrium.

SCORIA, or Dross, among metallurgiſts, is the recrement of metals in fuſion; or, more determinately ſpeaking, is that maſs which is produced by melting metals and ores: when cold, it is brittle, and not diſſoluble in water, being properly a kind of glaſs.

SCO-

Scorification, Scorpio.

SCORIFICATION, in metallurgy, is the art of reducing a body, either entirely or in part, into ſcoria.

SCORPÆNA, in ichthyology, a genus belonging to the order of thoracici. The head is large and ſharp; the eyes are near each other; there are teeth in the jaws, palate, and fauces; and there are ſeven rays in the membrane of the gill. The ſpecies are three, viz. the *porcus*, *ſcroſa*, and *horrida*. According to Mr Willoughby, the ſcorpæna is a fiſh of the anguilliform kind, called by the people of Cornwall *father laſher*. *Scorpæna* is alſo the name of a fiſh caught in many parts of the Mediterranean. It ſeldom grows to more than a pound weight. Its body is long, but not flatted, and is moderately thick. Its head is extremely large, and is armed with prickles, and it grows gradually leſs from thence to the tail. The prickles about the head are accounted venomous, and the fiſhermen uſually cut them off as ſoon as the fiſh is caught. Its tail is not forked, but rounded at the end. The belly and belly-fins are reddiſh.

Plate CCCCXLV.

SCORPIO, in zoology, a genus of inſects belonging to the order of aptera. It has eight feet, beſides two frontal claws; the eyes are eight in number, three on each ſide of the thorax, and two on the back. It has two claw-ſhaped palpi, a long jointed tail, with a pointed weapon at the extremity; it has likewiſe two combs ſituated between the breaſt and abdomen. There are ſix ſpecies, all natives of ſouthern climates.

Of all the claſſes of noxious inſects, the ſcorpion is the moſt terrible, whoſe ſhape is hideous, whoſe ſize among the inſects is enormous, and whoſe ſting is generally fatal. Happy for Britain, the ſcorpion is entirely a ſtranger there! In ſeveral parts of the continent of Europe it is but too well known, though it ſeldom grows above four inches long: but in the warm tropical climates, it is ſeen a foot in length, and in every reſpect as large as a lobſter, which it ſomewhat reſembles in ſhape. There have been enumerated nine different kinds of this dangerous inſect, including ſpecies and varieties, chiefly diſtinguiſhed by their colour; there being ſcorpions yellow, brown, and aſh-coloured; others that are the colour of ruſty iron, green, pale yellow, black, claret colour, white, and grey. There are four principal parts diſtinguiſhable in this animal; the head, the breaſt, the belly, and the tail. The ſcorpion's head ſeems, as it were, jointed to the breaſt; in the middle of which are ſeen two eyes; and a little more forward, two eyes more, placed in the fore part of the head: thoſe eyes are ſo ſmall, that they are ſcarcely perceivable; and it is probable the animal has but little occaſion for ſeeing. The mouth is furniſhed with two jaws: the undermoſt is divided into two, and the parts notched into each other, which ſerves the animal as teeth, and with which it breaks its food, and thruſts it into its mouth: theſe the ſcorpion can at pleaſure pull back into its mouth, ſo that no part of them can be ſeen. On each ſide of the head are two arms, each compoſed of four joints; the laſt of which is large, with ſtrong muſcles, and made in the manner of a lobſter's claw. Below the breaſt are eight articulated legs, each divided into ſix joints; the two hindmoſt of which are each provided with two crooked claws, and here and there covered with hair. The belly is divided into ſeven little rings; from the loweſt of which is continued a tail, compoſed of ſix joints, which are briſtly, and formed like little globes, the laſt being armed with a crooked ſting. This is that fatal inſtrument which renders this inſect ſo formidable: it is long, pointed, hard, and hollow: it is pierced near the bale by two ſmall holes, through which, when the animal ſtings, it ejects a drop of poiſon, which is white, cauſtic, and fatal. The reſervoir in which this poiſon is kept, is in a ſmall bladder near the tail, into which the venom is diſtilled by a peculiar apparatus. If this bladder be greatly preſſed, the venom will be ſeen iſſuing out through the two holes abovementioned; ſo that it appears, that when the animal ſtings, the bladder is preſſed, and the venom iſſues through the two apertures into the wound. Scorpio.

We have here given the common account of the ſting of theſe noxious animals; but though we cannot pretend to determine between them, we ſhall lay before our readers the following obſervations from a treatiſe on *Tropical Diſeaſes*, &c. by Dr Moſely of the Chelſea Hoſpital. "Galen juſtly obſerves, that a perſon who had not witneſſed the fact, would not ſuppoſe that ſo ſmall an injury as the ſting of a ſcorpion, or the bite of a poiſonous ſpider, could produce the violent effects which they do in the whole body. He ſays, the aculeus, or ſting, of a ſcorpion ends in the minuteſt point: and has no perforation through which any poiſon can paſs into the wound. Yet, he ſays, we muſt ſuppoſe the venom to be ſome ſpirital ſubſtance, or moiſture, in which a great power is concentrated in a ſmall compaſs. Before I had an opportunity (ſays Dr Moſeley) of examining this ſubject, my reſpect for the opinion of Galen made me doubt the accuracy of Leeuwenhoek, Redi, Mead, and others, who aſſert that there is an aperture near the cuſpis of a ſcorpion's ſting; and that through this aperture a liquid poiſon is injected when a wound is inflicted. Repeated experiments, with the beſt glaſſes, have never enabled me to diſcover any foramen, or opening, whatever."

The following cure may alſo be worth the reader's notice. "Mrs Pidgeley, at Kingſton in Jamaica, in January 1781, was ſtung by a ſcorpion in the foot, above the little toe. The part became inſtantly red and painful; and ſoon after livid. The pain increaſed to great ſeverity. Some rum was applied to the wound, on which the pain immediately left the foot, and paſſed up to the groin, with great agony. The pain then paſſed upwards, and diſtended itſelf about the pit of the ſtomach, neck, and throat, attended with tremors, cold ſweats and languors. As the pain paſſed the abdomen, it occaſioned a violent purging and fainting, which ceaſed on its advancing higher. I * was called to her, and gave her the following medicines, a few doſes of which removed every ſymptom. She had been extremely ill for thirty-ſix hours. ℞ *Sal. Succin.* 3ij; *Camphor. gr.* xij; *Cinnabar. Antimon. gr.* x; *Caſtor. Virgin. q.ſ. fiant boli ſex.* One of theſe was taken every hour, with four ſpoonfuls of the following mixture: ℞ *Aq. Menthæ* ℥ vj; *Liquor. Peregrin.* 3ij; *Syr. Croci* 3ij; *Myſt.*" * Dr Moſeley.

There are few animals more formidable, or more truly miſchievous, than the ſcorpion. As it takes refuge in a ſmall place, and is generally found ſkultering in houſes, it muſt frequently ſting thoſe among whom

Scorpio. whom it reſides. In ſome of the towns of Italy, and in France, in the province of Languedoc, it is one of the greateſt peſts that torments mankind: but its malignity in Europe is trifling, when compared to what the natives of Africa and the eaſt are known to experience. In Batavia, where they grow twelve inches long, there is no removing any piece of furniture, without the utmoſt danger of being ſtung by them. Boſman aſſures us, that along the Gold Coaſt they are often found larger than a lobſter; and that their ſting is inevitably fatal. In Europe, however, they are by no means ſo large, ſo venomous, or ſo numerous. The general ſize of this animal does not exceed two or three inches; and its ſting is very ſeldom found to be fatal. Maupertius, who made ſeveral experiments on the ſcorpion of Languedoc, found it by no means ſo invariably dangerous as had till then been repreſented. He provoked one of them to ſting a dog, in three places of the belly where the animal was without hair. In about an hour after, the poor animal ſeemed greatly ſwollen, and became very ſick; he then caſt up whatever he had in his bowels; and for about three hours continued vomiting a whitiſh liquid. The belly was always greatly ſwollen when the animal began to vomit; but this operation always ſeemed to abate the ſwelling; which alternately ſwelled, and was thus emptied, for three hours ſucceſſively. The poor animal after this fell into convulſions, bit the ground, dragged himſelf along upon his fore-feet, and at laſt died, five hours after being bitten. He was not partially ſwollen round the place which was bitten, as is uſual after the ſting of a waſp or a bee; but his whole body was inflated, and there only appeared a red ſpot on the places where he had been ſtung.

Some days after, however, the ſame experiment was tried upon another dog, and even with more aggravated cruelty: yet the dog ſeemed no way affected by the wounds: but, howling a little when he received them, continued alert and well after them; and ſoon after was ſet at liberty, without ſhowing the ſmalleſt ſymptoms of pain. So far was this poor creature from being terrified at the experiment, that he left his own maſter's houſe, to come to that of the philoſopher, where he had received more plentiful entertainment. The ſame experiment was tried by freſh ſcorpions upon ſeven other dogs, and upon three hens; but not the ſmalleſt deadly ſymptom was ſeen to enſue. From hence it appears, that many circumſtances, which are utterly unknown, muſt contribute to give efficacy to the ſcorpion's venom. Whether its food, long faſting, the ſeaſon, or the nature of the veſſels it wounds, or its ſtate of maturity, contribute to or retard its malignity, is yet to be aſcertained by ſucceeding experiment. In the trials made by our philoſopher he employed ſcorpions of both ſexes, newly caught, and ſeemingly vigorous and active. The ſucceſs of this experiment may ſerve to ſhew, that many of thoſe boaſted antidotes which are given for the cure of the ſcorpion's ſting, owe their ſucceſs rather to accident than their own efficacy. They only happened to cure when their ſting was no way dangerous; but in caſes of actual malignity, they might probably be utterly unſerviceable.

The ſcorpion of the tropical climates being much larger than the former, is probably much more venomous. Helbigius, however, who reſided for many years in the eaſt, aſſures us, that he was often ſtung by the ſcorpion, and never received any material injury from the wound: a painful tumor generally enſued; but he always cured it by rubbing the part with a piece of iron or ſtone, as he had ſeen the Indians practiſe before him, until the fleſh became inſenſible. Seba, Moore, and Boſman, however, give a very different account of the ſcorpion's malignity: and aſſert, that, unleſs ſpeedily relieved, the wound becomes fatal. Scorpio.

It is certain, that no animal in the creation ſeems endued with ſuch an iraſcible nature. They have often been ſeen, when taken and put into a place of ſecurity, to exert all their rage againſt the ſides of the glaſs veſſel that contained them. They will attempt to ſting a ſtick when put near them: and attack a mouſe or a frog, while thoſe animals are far from offering any injury. Maupertius put three ſcorpions and a mouſe into the ſame veſſel together, and they ſoon ſtung the little animal in different places. The mouſe, thus aſſaulted, ſtood for ſome time upon the defenſive, and at laſt killed them all, one after another. He tried this experiment, in order to ſee whether the mouſe, after it had killed would eat the ſcorpions; but the little quadruped ſeemed ſatisfied with the victory, and even ſurvived the ſeverity of the wounds it had received. Wolkamer tried the courage of the ſcorpion againſt the large ſpider, and incloſed ſeveral of both kinds in glaſs veſſels for that purpoſe. The ſucceſs of this combat was very remarkable. The ſpider at firſt uſed all its efforts to entangle the ſcorpion in its web which it immediately began ſpinning; but the ſcorpion reſcued itſelf from the danger, by ſtinging its adverſary to death: it ſoon after cut off, with its claws, all the legs of the ſpider, and then ſucked all the internal parts at its leiſure.—If the ſcorpion's ſkin had not been ſo hard, Wolkamer is of opinion that the ſpider would have obtained the victory; for he had often ſeen one of theſe ſpiders deſtroy a toad.

The fierce ſpirit of this animal is equally dangerous to its own ſpecies; for ſcorpions are the cruelleſt enemies to each other. Maupertius put about 100 of them together in the ſame glaſs; and they ſcarce came into contact when they began to exert all their rage in mutual deſtruction: there was nothing to be ſeen but one univerſal carnage, without any diſtinction of age or ſex; ſo that in a few days there remained only 14, which had killed and devoured all the reſt.

But their unnatural malignity is ſtill more apparent in their cruelty to their offſpring. He incloſed a female ſcorpion, big with young, in a glaſs veſſel, and ſhe was ſeen to devour them as faſt as they were excluded: there was but one only of the number that eſcaped the general deſtruction, by taking refuge on the back of its parent; and this ſoon after revenged the cauſe of its brethern, by killing the old one in its turn.

Such is the terrible and unrelenting nature of this inſect, which neither the bonds of ſociety nor of nature can reclaim: it is even aſſerted, that, when driven to any extremity, the ſcorpion will often deſtroy itſelf. The following experiment was ineffectually tried by Maupertius: "But," ſays Mr Goldſmith, "I am ſo well aſſured of it by many eye-witneſſes, who have ſeen it both in Italy and America, that I have no doubt remaining of its veracity. A ſcorpion, newly caught, is

Scolopax Gallinago
or Snipe.

Scolopax Phaeopus
or Whimbrel.

Scolopax Arquata
or Curlew.

Scolopax Rusticola
or Woodcock.

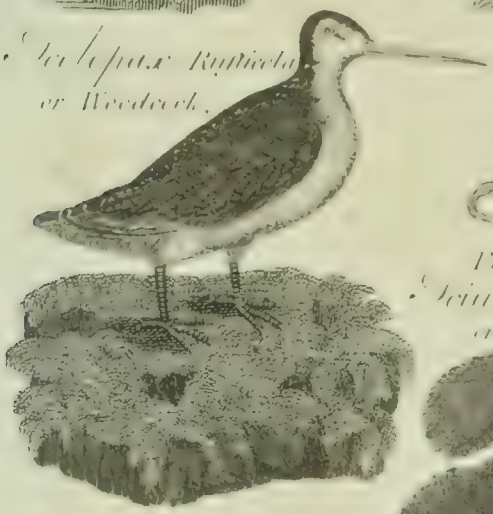
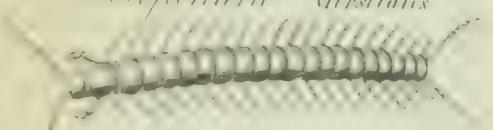


Fig. 1.
Scolopendra Morsitans



Scorpion.

Fig. 3.
Sciurus Volans
or Flying Squirrel
in a flying posture.

Sciurus Vulgaris
or Grey Squirrel.

Fig. 2.
Sciurus Sagitta
or
Sitting Squirrel.

Flying
Squirrel in a
sitting posture.
Fig. 4.

Scorpio, Scorpiurus.

is placed in the midſt of a circle of burning charcoal and thus an egreſs prevented on every ſide: the ſcorpion, as I am aſſured, runs for about a minute round the circle, in hopes of eſcaping: but finding that impoſſible, it ſtings itſelf on the back of the head; and in this manner the undaunted ſuicide inſtantly expires."

It is happy for mankind that theſe animals are thus deſtructive to each other; ſince otherwiſe they would multiply in ſo great a degree, as to render ſome countries uninhabitable. The male and female of this inſect are very eaſily diſtinguiſhable; the male being ſmaller and leſs hairy. The female brings forth her young alive, and perfect in their kind. Redi having bought a quantity of ſcorpions, ſelected the females, which, by their ſize and roughneſs, were eaſily diſtinguiſhable from the reſt, and putting them in ſeparate glaſs veſſels, he kept them for ſome days without food. In about five days one of them brought forth 38 young ones, well ſhaped, and of a milk-white colour, which changed every day more and more into a dark ruſty hue. Another female, in a different veſſel, brought forth 27 of the ſame colour; and the day following the young ones ſeemed all fixed to the back and belly of the female. For near a fortnight all theſe continued alive and well: but afterwards ſome of them died daily; until, in about a month, they all died except two.

Were it worth the trouble, theſe animals might be kept living as long as curioſity ſhould think proper. Their chief food is worms and inſects; and upon a proper ſupply of theſe, their lives might be lengthened to their natural extent. How long that may be, we are not told; but if we may argue from analogy, it cannot be leſs than ſeven or eight years; and perhaps, in the larger kind, double that duration. As they have ſomewhat the form of the lobſter, ſo they reſemble that animal in caſting their ſhell, or more properly their ſkin; ſince it is ſofter by far than the covering of the lobſter, and ſet with hairs, which grow from it in great abundance, particularly at the joinings. The young lie in the womb of the parent, each covered up in its own membrane, to the number of 40 or 50, and united to each other by an oblong thread, ſo as to exhibit altogether the form of a chaplet.

Such is the manner in which the common ſcorpion produces its young: but there is a ſcorpion of America produced from the egg, in the manner of the ſpider. The eggs are no longer than pins points; and they are depoſited in a web, which they ſpin from their bodies, and carry about with them, till they are hatched. As ſoon as the young ones are excluded from the ſhell, they get upon the back of the parent, who turns her tail over them, and defends them with her ſting. It ſeems probable, therefore, that captivity produces that unnatural diſpoſition in the ſcorpion which induces it to deſtroy its young; ſince, at liberty it is found to protect them with ſuch unceaſing aſſiduity. For the various modes of preventing the fatal conſequences of the bites of theſe and other noxious animals, we refer to Moſeley's treatiſe above quoted.

SCORPIO, *Scorpion*, in aſtronomy, the eighth ſign of the zodiac denoted by the character ♏. See ASTRONOMY.

Scorpion Fly. See PANORPA.

SCORPIURUS, CATERPILLARS, in botany: A genus of the decandria order, belonging to the diadelphia claſs of plants; and in the natural method ranking under the 32d order, *Papilionaceæ*. The legumen is contracted by incitions on the inſide betwixt every two ſeeds, revoluted round.

There are four ſpecies; the moſt remarkable of which is the vermiculata, a native of Italy and Spain. It is an annual plant, with trailing herbaceous ſtalks, which at each joint have a ſpatular-ſhaped leaf with a long foot-ſtalk. From the wings of the leaves come out the foot ſtalks of the flowers, which ſuſtain at the top one yellow butterfly flower, ſucceeded by a thick twiſted pod having the ſize and appearance of a large caterpillar, from whence it had this title. This has long been preſerved in the gardens of Britain, more on account of its odd ſhape than for any great beauty. It is propagated by ſowing the ſeeds on a bed of light earth; and when the plants come up, they muſt be kept free from weeds and thinned, ſo that there may be a foot diſtance between them.

Scorzonera, Scot.

SCORZONERA, VIPER-GRASS, in botany: A genus of the polygamia æqualis order, belonging to the ſyngeneſia claſs of plants; and in the natural method ranking under the 49th order, *Compoſitæ*. The receptacle is naked; the pappus plumy; the calyx imbricated, with ſcales membranaceous on their margins.

The moſt remarkable ſpecies is the hiſpanica, or common ſcorzonera, which is cultivated in the gardens of this country, both for culinary and medicinal purpoſes, The root is carrot-ſhaped, about the thickneſs of a finger, covered with a dark brown ſkin, is white within, and has a milky juice. The ſtalk riſes three feet high, is ſmooth, branching at the top, and garniſhed with a few narrow leaves, whoſe baſes half embrace the ſtalk. The flowers are of a bright yellow colour, and terminate the ſtalks in ſcaly empalements compoſed of many narrow tongue-ſhaped hermaphrodite florets lying imbricatim over each other like the ſcales of a fiſh, and are of a bright yellow colour. After theſe are decayed, the germen, which ſits in the common empalements, turns to oblong cornered ſeeds, having a roundiſh ball of feathered down at the top. This plant is propagated by ſeeds; and muſt be carefully thinned and kept free from weeds, otherwiſe the plants will be weak.

The roots of ſcorzonera were formerly much celebrated for their alexipharmic virtues, and for throwing out the ſmall-pox; but have now almoſt entirely loſt their character: however, as they abound with a milky juice, they may ſometimes be of uſe for ſtrengthening the viſcera, and promoting the fluid ſecretions.

SCOT, a cuſtomary contribution laid upon all ſubjects, according to their abilities. Whoever were aſſeſſed in any ſum, though not in equal proportions, were ſaid to pay ſcot and lot.

SCOT (Michael) of Balwirie, a learned Scottiſh author of the 13th century. This ſingular man made the tour of France and Germany; and was received with ſome diſtinction at the court of the emperor Frederic II. Having travelled enough to gratify his curioſity or his vanity, he returned to Scotland and gave himſelf up to ſtudy and contemplation. He was ſkilled in languages; and, conſidering the age in which he lived, was no mean proficient in philoſophy, mathematics, and medicine. He tranſlated into Latin from the Arabic, the hiſtory of animals by the celebrated phy-

Scot Nova Scotia.

ficial in Avicenna. He published the whole works of Aristotle, with notes, and affected much to reason on the principles of that great philosopher. He wrote a book concerning *The Secrets of Nature*, in which he treats of generation, physiognomy, and the signs by which we judge of the temperaments of men and women. We have also a tract of his *On the Nature of the Sun and Moon*. He there speaks of the *grand operation*, as it is termed by alchymists, and is exceedingly solicitous about the *projected powder*, or the *philosopher's stone*. He likewise published what he calls *Mensa Philosophica*, a treatise replete with astrology and chiromancy. He was much admired in his day, and was even suspected of magic; and had Roger Bacon and Cornelius Agrippa for his panegyrists.

Scot (Reginald), a judicious writer in the 16th century, was the younger son of Sir John Scot of Scot's-hall, near Smeethe in Kent. He studied at Hart-hall in the university of Oxford; after which he retired to Smeethe, where he lived a studious life, and died in 1599. He published, *The perfect platform of a Hop garden*; and a book entitled, *The Discovery of Witchcraft*; in which he showed that all the relations concerning magicians and witches are chimerical. This work was not only censured by king James I. in his *Dæmonology*, but by several eminent divines; and all the copies of it that could be found were burnt.

SCOTAL, or Scotale, is where any officer of a forest keeps an ale-house within the forest, by colour of his office, making people come to his house, and there spend their money for fear of his displeasure. We find it mentioned in the charter of the forest, cap. 8. "Nullus forestarius faciat *Scotallas*, vel garbas colligat, vel aliquam collectam faciat." &c. *Manwood*, 216. —The word is compounded of *scot* and *ale*, and by transposition of the words is otherwise called *aleshot*.

SCOTER. See Anas, n° 6.

Nova SCOTIA, or *New Scotland*, one of the British settlements in North America, situated between 43° and 49° north latitude, and between 60° and 67° west longitude, is bounded by the river St Laurence on the north; by the gulph of St Laurence and the Atlantic ocean on the east; by the same ocean on the south; and by Canada and New England on the west.—In the year 1784, this province was divided into two governments. The province and government now styled *New Brunswick* is bounded on the westward of the mouth of the river St Croix, by the said river to its source, and by a line drawn due north from thence to the southern boundary of the province of Quebec, to the northward by the said boundary as far as the western extremity of the Bay de Chaleurs, to the eastward by the said bay to the gulph of St Laurence to the bay called *Bay Verte*, to the south by a line in the centre of the Bay of Fundy, from the river St Croix aforesaid, to the mouth of the Musquat river, by the said river to its source, and from thence by a due east line across the Isthmus into the Bay Verte, to join the eastern lot above described, including all islands within six leagues of the coast.

The chief rivers are, the river of St Laurence, which forms the northern boundary. The rivers Risgouche and Nipisiguit run from west to east, and fall into the bay of St Laurence. The rivers of St John, Passamaquadi, Penobscot, and St Croix, which run from north to south, fall into Fundy Bay, or the sea a little to the eastward of it. Nova Scotia.

The seas, adjoining to it are, the Atlantic ocean, Fundy Bay, and the gulph of St Laurence. The lesser bays are, Chenigto and Green Bay upon the isthmus which joins the north part of Nova Scotia to the south; and the Bay of Chaleurs on the north-east; the Bay of Chedibucto on the south-east; the Bay of the Islands, the Ports of Bart, Chebucto, Prosper, St Margaret, La Heve, port Maltois, port Rysignol, port Vert, and port Joly, on the south; port La Tour on the south-east; port St Mary, Annapolis, and Minas on the south side of Fundy Bay, and port Roseway, now the most populous of all.—The chief capes are, Cape Portage, Ecoumenac, Tourmentin, Cape Port, and Epis, on the east; Cape Fogerie and Cape Canceau on the south-east; Cape Blanco, Cape Vert, Cape Theodore, Cape Dore, Cape La Heve, and Cape Negro, on the south; Cape Sable and Cape Fourche on the south-west.—The lakes are very numerous, but have not yet received particular names.

The face of the country, when viewed at a distance, presents a pleasingly variegated appearance of hills and valleys, with scarcely any thing like mountains to interrupt the prospect, especially near the sea. A nearer approach discovers those sublime and beautiful scenes which are so far superior to the gaudy embellishments of art. Immense forests, formed of the tallest trees, the growth of ages, and reaching almost to the clouds, everywhere cover and adorn the land: Their leaves falling in autumn, add continually to that crust of moss, vegetables, and decaying wood, that has for many centuries been accumulating; whilst the rays of the sun, unable to pierce the thick shade which everywhere covers the ground, leaves it in a perpetual state of damp and rottenness; a circumstance which contributes, in no small degree, to increase the sharpness of the air in winter.

The clouds, flying over the higher grounds, which are covered in every direction with one vast forest, and arrested by the attraction of the woods, fill the country with water. Every rock has a spring, and every spring causes a swamp or morass, of greater or less extent in proportion to its cause: hence it is, that travelling becomes almost impracticable in summer, and is seldom attempted, but in the fall of the year, when winter begins to set in, and the ground is already frozen.

The land throughout the peninsula is in no part mountainous, but frequently rises into hills of gradual ascent, everywhere clothed with wood. From these arise innumerable springs and rivulets, which not only fertilize and adorn the country, but have formed, in the midst of it, a large lake or piece of fresh water, which is of various depths, and of which, however, little more is known, than that it has upon its borders very large tracts of meadow-land highly improveable. That part of the province which is beyond the Bay of Fundy, and extends to the river St Laurence, rises also gradually as we advance from the sea quite to Canada, but is, however, hardly anywhere mountainous. Its lands are for the most part very rich, particularly at a distance from the sea; and its woods abound with the hardest and loftiest trees.

Though this country, like Canada, is subject to long and

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and ſevere winters, ſucceeded by ſudden and violent heats, often much greater than what are felt in the ſame latitudes in Europe, yet it cannot be accounted an unhealthy climate. The air in general in winter is very ſharp, frotty, and dry; the ſky ſerene and unclouded, by which every kind of exerciſe adapted to the ſeaſon is rendered pleaſant and agreeable. The fogs are frequent near the ſea, but ſeldom ſpread themſelves to any diſtance inland.

The winter commonly breaks up with heavy rains, and the inhabitants experience hardly any of the delights of the ſpring, which in England is accounted the moſt agreeable ſeaſon of the year. From a bleak and dreary appearance, and the gloomy ſcenes of winter wrapped around the vegetable world, the country throws off its diſguſtful attire, and in a few days exhibits a grand and pleaſant proſpect; the vegetation being inconceivably rapid, nature paſſes ſuddenly from one extreme to another, in a manner utterly unknown to countries accuſtomed to a gradual progreſſion of ſeaſons. And, ſtrange as it may appear, it is an acknowledged fact, a fact which furniſhes a certain proof of the purity of the air, that theſe ſudden changes ſeldom, if ever, affect the health of ſtrangers or Europeans.

In this country agriculture has yet made but ſmall progreſs. Nova Scotia is almoſt a continued foreſt, producing every kind of wood which grows in the neighbouring ſtates of New England. Four fifths of all the lands in the province are covered with pines, which are valuable not only for furniſhing maſts, ſpars, lumber for the ſugar plantations, and timber for building, but for yielding tar, pitch, and turpentine, commodities which are all procured from this uſeful tree, and with which the mother-country may in a few years eaſily be ſupplied.

All the various ſpecies of birch, beech, and maple, and ſeveral ſorts of ſpruce, are found in all parts in great abundance; as alſo numerous herbs and plants, either not common to, or not known in, England. Amongſt theſe none is more plentiful than ſarſaparilla, and a plant whoſe root reſembles rhubarb in colour, taſte, and effects; likewiſe the Indian or mountain tea, and maiden-hair, an herb much in repute for the ſame purpoſe, with ſhrubs producing ſtrawberries, raſpberries, and many other pleaſant fruits, with which the woods in ſummer are well ſtored: Of theſe wild productions the cherries are beſt, though ſmaller than ours, and growing in bunches ſomewhat reſembling grapes. The ſaſſafras tree grows plentifully in common with others; but amongſt them none is more uſeful to the inhabitants than a ſpecies of maple, diſtinguiſhed by the name of the *ſugar tree*, as affording a conſiderable quantity of that valuable ingredient. See SUGAR.

Amongſt the natural productions of Nova Scotia, it is neceſſary to enumerate their iron-ore, which is ſuppoſed equally good with that found in any part of America.

Lime-ſtone is likewiſe found in many places: it is extremely good, and is now much uſed for building: independent of which, it gives the farmers and landholders a great advantage for improving the ground, as it is found by experience to be one of the moſt approved things in the world for that purpoſe.

Several of the uſeful and moſt common European fruits have been planted in many places; ſo that the province now produces great quantities of apples, ſome pears, and a few plums, which are all good of their kind, eſpecially the former. The ſmaller fruits, ſuch as currant, gooſeberries, &c. grow to as great perfection as in Europe; and the ſame may be ſaid of all the common and uſeful kinds of garden plants. Among theſe their potatoes have the preference, as being the moſt ſerviceable in a country abounding with fiſh; and indeed they are not to be exceeded in goodneſs by any in the world. The maize, or Indian corn, is a native of much warmer climates; and, though planted here, never arrives at more than two-thirds of its natural bigneſs; a defect which ariſes as well from the ſhortneſs of the ſummer as the gravelly nature of the ſoil. Tobacco may likewiſe be cultivated with eaſe in Nova Scotia, as it is already everywhere in Canada, from Lake Champlain to the iſle of Orleans, for the purpoſe of internal conſumption.

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This country is not deficient in the animal productions of the neighbouring ſtates, particularly deer, beavers, and others. Wild fowl, and all manner of game, and many kinds of European fowls and quadrupeds, have from time to time been brought into it, and thrive well. At the cloſe of March the fiſh begin to ſpawn, when they enter the rivers in ſuch ſhoals as are incredible. Herrings come up in April, and the ſturgeon and ſalmon in May. But the moſt valuable appendage of New Scotland is the Cape Sable coaſt, along which is one continued range of cod-fiſhing banks and excellent harbours. This fiſhery employs a great number of men, in ſome ſeaſons not leſs than 10,000, when 120,000 quintals will be caught, of which 40,000 may be exported. Theſe, at the loweſt price, muſt bring into the colony L. 26,000 Sterling, either in caſh or in commodities neceſſary to the inhabitants.

Notwithſtanding the comparatively uninviting appearance of this country, it was here that ſome of the firſt European ſettlements were made. The firſt grant of lands in it was given by James I. to his ſecretary Sir William Alexander, from whom it had the name of *Nova Scotia* or *New Scotland*. Since that period it has frequently changed hands from one private proprietor to another, and from the French to the Engliſh nation backward and forward.

It was in 1604 that the French firſt ſettled in Nova Scotia, to which they gave the name of *Acadia*. Inſtead of fixing towards the eaſt of the peninſula, where they would have had larger ſeas, an eaſy navigation, and plenty of cod, they choſe a ſmall bay, afterwards called French Bay, which had none of theſe advantages. It has been ſaid, that they were invited by the beauty of Port Royal, where a thouſand ſhips may ride in ſafety from every wind, where there is an excellent bottom, and at all times four or five fathoms of water, and eighteen at the entrance. It is more probable that the founders of this colony were led to chooſe this ſituation, from its vicinity to the countries abounding in furs, of which the excluſive trade had been granted to them. This conjecture is confirmed by the following circumſtance: that both the firſt monopolizers, and thoſe who ſucceeded them, took the utmoſt pains to divert the attention of their countrymen, whom an unſettled diſpoſition, or neceſſity, brought into theſe regions, from the clearing of the woods, the breeding of cattle, fiſhing, and every kind of culture; chooſing rather to

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engage the induſtry of theſe adventurers in hunting or in trading with the ſavages.

This colony was yet in its infancy when the ſettlement, which has ſince become ſo famous under the name of *New England*, was firſt eſtabliſhed in its neighbourhood. The rapid ſucceſs of the plantations in this new colony did not much attract the notice of the French. This kind of proſperity did not excite any jealouſy between the two nations. But when they began to ſuſpect that there was likely to be a competition for the beaver trade and furs, they endeavoured to ſecure to themſelves the ſole property of it, and were unfortunate enough to ſucceed.

At their firſt arrival in Acadia, they had found the peninſula, as well as the foreſts of the neighbouring continent, peopled with ſmall ſavage nations, who went under the general name of *Abenakies*. Though equally fond of war as other ſavage nations, they were more ſociable in their manners. The miſſionaries eaſily inſinuating themſelves among them, had ſo far inculcated their tenets, as to make enthuſiaſts of them. At the ſame time that they taught them their religion, they inſpired them with that hatred which they themſelves entertained for the Engliſh name. This fundamental article of their new worſhip, being that which made the ſtrongeſt impreſſion on their ſenſes, and the only one that favoured their paſſion for war, they adopted it with all the rage that was natural to them. They not only refuſed to make any kind of exchange with the Engliſh, but alſo frequently diſturbed and ravaged the frontiers of that nation.

This produced perpetual hoſtilities between the New Englanders and the French ſettlers in Acadia, till that province was, at the peace of Utrecht, for ever ceded to the Engliſh, who ſeemed not for a long time to diſcover the value of their new acquiſition. They reſtored to it its ancient name of *Nova Scotia;* and having built a ſlight fortification at Port-Royal, which they called *Annapolis* in honour of Queen Anne, they contended themſelves with putting a very ſmall garriſon into it. In proceſs of time, however, the importance of Nova Scotia to the commerce of Great Britain began to be perceived; and at the peace of 1749, the miniſtry offered particular advantages to all perſons who choſe to go over and ſettle in Acadia. Every ſoldier, ſailor, and workman, was to have 50 acres of land for himſelf, and ten for every perſon he carried over in his family. All non commiſſioned officers were allowed 80 for themſelves, and 15 for their wives and children; enſigns 200; lieutenants 300; captains 400; and all officers of a higher rank 600; together with 30 for each of their dependents. The land was to be tax free for the firſt ten years, and never to pay above one livre two ſols ſix deniers * for fifty acres. Beſides this the government engaged to advance or reimburſe the expences of paſſage, to build houſes, to furniſh all the neceſſary inſtruments for fiſhery or agriculture, and to defray the expences of ſubſiſtence for the firſt year. Theſe encouragements determined 3750 perſons, in the month of May 1749, to go to America, in hopes of bettering their fortune.

* About 1s. ſterling.

Thus encouraged, the province of Nova Scotia began to flouriſh, though in 1769 it ſent out only 14 veſſels and 148 boats, which together amounted to 7324 tons, and received 22 veſſels and 120 boats, which together made up 7006 tons. They conſtructed three ſloops, which did not exceed 110 tons burden. Their exportation for Great Britain and for the other parts of the globe did not amount to more than 729,850 livres 12 ſols 9 deniers †. Continuing, however, true to its allegiance when the other colonies threw of the dominion of Great Britain, it has now become a place of great conſequence both to the mother-country and the Weſt Indies. Its ſhipping and ſeamen are rapidly increaſing, as well as its produce, which affords the pleaſing proſpect of being able to ſupply itſelf with all the neceſſaries of life. The number of perſons who have abandoned their habitations in the more ſouthern ſtates, and ſettled either there or in Canada, cannot be eſtimated, by the moſt moderate calculation, at leſs than 80,000; and it is without doubt the moſt convenient in point of ſituation of any province in America for a maritime power of Europe to be poſſeſſed of.

Scotia, Scotland.

† About L. 30,410, 8 s. 10 d. Sterling.

Scotia, in architecture, a ſemicircular cavity or channel between the tores in the baſes of columns.

SCOTISTS, a ſect of ſchool-divines and philoſophers, thus called from their founder *J. Duns Scotus*, a Scottiſh cordelier, who maintained the immaculate conception of the virgin, or that ſhe was born without original ſin, in oppoſition to Thomas Aquinas and the Thomiſts.

As to philoſophy, the Scotiſts were, like the Thomiſts, Peripatetics (ſee Peripatetics); only diſtinguiſhed by this, that in each being, as many different qualities as it had, ſo many different formalities did they diſtinguiſh; all diſtinct from the body itſelf, and making as it were ſo many different entities; only theſe were metaphyſical, and as it were ſuperadded to the being. The Scotiſts and Thomiſts likewiſe diſagreed about the nature of the divine co-operation with the human will, the meaſure of divine grace that is neceſſary to ſalvation, and other abſtruſe and minute queſtions, which it is needleſs to enumerate.

SCOTLAND, the country of the Scots, or that part of Great Britain lying to the north of the Tweed; is ſituated between the 54th and 59th degrees of north latitude, and extends in length about 278 miles, and in ſome places near 180 in breadth; containing an area of 27,794 miles. On the ſouth it is bounded by England; on the north, eaſt, and weſt, by the Deucaledonian, German, and Iriſh ſeas.

I

Origin of the name,

It is extremely difficult to give any ſatisfactory account of the origin of the appellation of *Scots*, from which the country has derived its name. It has puzzled the moſt eminent antiquaries, whoſe conjectures ſerve rather to perplex than to clear up the difficulty. Nor is this to be wondered at, when Varro and Dionyſius could not agree about the etymon of *Italia*, nor Plutarch and Solinus about that of *Rome*. All that we know with any degree of certainty, concerning the appellation of *Scot*, amounts to this—That it was at firſt a term of reproach, and conſequently framed by enemies, rather than aſſumed by the nation diſtinguiſhed by that name. The Highlanders, who were the genuine deſcendants of the ancient Scots, are abſolutely ſtrangers to the name, and have been ſo from the beginning of time. All thoſe who ſpeak the Gaelic language call themſelves *Albanich* or *Gael*, and their country *Alba* or *Gaeldochd*.

The Picts, who poſſeſſed originally the northern and eaſtern,

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XII

1 Situation. eaſtern, and in a latter period alſo the more ſouthern, diviſion of North Britain, were at firſt more powerful than the Caledonians of the weſt. It is therefore probable, that the Picts, from a principle of malevolence and pride, were ready to traduce and ridicule their weaker neighbours of Argyle. Theſe two nations ſpoke the ſame language, the Gaelic. In that language *Scot*, or *Scode*, ſignifies a corner or ſmall diviſion of a country. Accordingly, a corner of North Britain is the very name which Giraldus Cambrenſis gives the little kingdom of Argyle, which the ſix ſons of Muredus king of Ulſter were ſaid, according to his information, to have erected in Scotland. *Scot* in Gaelic is much the ſame with *little* or *contemptible* in Engliſh; and *Scotlan*, literally ſpeaking, ſignifies a *ſmall flock*; metaphorically, it ſtands for a ſmall body of men. *(Dr Macpherſon's Diſſert.)*

Others obſerve, that in the ſame language the word *Scuit* ſignifies a *wanderer*, and ſuppoſe that this may have been the origin of the name of *Scot*; a conjecture which they think is countenanced by a paſſage in Ammianus Marcellinus (l. xxvii.), who characterizes the men by the epithet of *roaming*; "per diverſa vagantes." *(Mr Macpherſon, and Mr Whitaker).*

All that we can ſay is, that for ſome one of the reaſons couched under the above diſparaging epithets, their malicious or ſneering neighbours, the Picts or the Britons, may have given the appellation of *Scots* to the anceſtors of the Scottiſh nation.

At what time the inhabitants of the weſt of Scotland came to be diſtinguiſhed by this name is uncertain. Porphyrius the philoſopher is the firſt who mentions them, about the year of the Chriſtian era 267; and towards the middle of the 4th century we find them mentioned with other Britiſh nations by Am. Marcellinus, in the paſſage above referred to.

2 And of the people. The origin of the Scots has been warmly diſputed by many antiquaries of note; particularly by Mr Macpherſon and Mr Whitaker. The firſt contends, that they are of Caledonian, the latter, that they are of Iriſh extraction. Each ſupports his poſition with ſuch arguments and authorities, that an impartial inquirer is almoſt at a loſs which of their opinions he ought to eſpouſe. What appears moſt probable is, that they are both partly in the right and partly in the wrong. —The Scots ſeem to have been originally deſcended from Britons of the ſouth, or from Caledonians, who being preſſed forward by new colonies from Gaul, till they came to the weſtern ſhore of Britain, paſſed over from thence into Ireland, probably about 100 years before the Chriſtian era. About the year of Chriſt 320, they returned again into Britain; or at leaſt a large colony of them, under the conduct of Fergus, and ſettled on the weſtern coaſts Caledonia, from whence they had formerly migrated. As early as the year 340, we find them aſſociated with the Picts in their expeditions to the Roman province; and for 90 or 100 years after, their ravages are frequently mentioned by the Roman and Britiſh writers. *Whitaker's hiſt. of the Britons*, 284).

3 Extent of territory. The territory of the ancient Scots, before the annexation of Pictavia, comprehended all that ſide of Caledonia which lies along the north and weſtern ocean, from the frith of Clyde to the Orkneys. Towards the eaſt, their dominions were divided from the Piſtiſh territories by thoſe high mountains which run from Dambarton to the frith of Tain.—In proceſs of time the Scots, under the reign of Kenneth the ſon of Alpin, became ſo powerful as to ſubdue entirely their neighbours the Picts, and gave their own denomination to all Caledonia, Pictavia, and Valentia; all which are ſtill comprehended under the general name of *Scotland*. Scotland.

Like thoſe of all other nations, the hiſtorians of Scotland aſſume too great an antiquity for their countrymen; however, they are much leſs extravagant in this reſpect than many others. By them the reign of Fergus, the firſt Scots monarch, is placed in 330 B. C. He was the ſon of Ferchard an Iriſh prince; and is ſaid to have been called into Scotland by the Caledonians, to aſſiſt them againſt the ſouthern Britons, with whom they were then at war. Having landed on one of the Æbudæ or weſtern iſles, he had a conference with the Caledonians, whoſe language and manners he found to be the ſame with thoſe of his countrymen. Having then landed in Scotland, and taken the field at the head of his new allies, he engaged the Britons under their king Coilus. Victory declared in favour of the Scots; Coilus was defeated and killed; and from him the province of Kyle firſt received its name. After this Fergus was declared king of the Scots, with the ſolemnity of an oath. But he did not long enjoy his new dignity: for having been recalled to Ireland to quiet ſome commotions there, he was drowned, by a ſudden tempeſt, on his return, at a place in Ireland called from him *Knock-Fergus*, or *Carrick-Fergus*; *i. e.* Fergus's Rock. 4 Fergus the firſt king of Scotland.

5 Collateral ſucceſſion in uſe among the Scots. Fergus was ſucceeded by his brother Feritharis, to the prejudice of his two ſons Ferlegus and Mainus. This, we are told by the ancient Scottiſh writers, was done in conformity to a law, by which it was ordained, that whilſt the children of their kings were infants, one of their relations who was reckoned the moſt fit for the government ſhould be raiſed to the throne, but that after his death the ſovereignty ſhould return to the ſons of the former king. This was the caſe at preſent; however, Ferlegus, impatient for the crown, made a formal demand of it from his uncle. The diſpute being referred to an aſſembly of the ſtates, Feritharis was confirmed on the throne; and Ferlegus would have been condemned for ſedition, had not his uncle interpoſed. However, he was impriſoned; but having made his eſcape, he fled firſt to the Picts, and then to the Britons, in order to excite them againſt Feritharis. With both he failed in accompliſhing his purpoſe: but, in the mean time, his uncle being ſtabbed in his bed, the ſuſpicion fell upon Ferlegus, who was thereupon ſet aſide from the ſucceſſion, and died in obſcurity, the throne being conferred upon his brother Mainus.

The reigns of Mainus, Dornadill, and Nothat, afford nothing remarkable, excepting that Dornadill, who was a great hunter, inſtituted the laws of hunting in his country. Nothat was killed in a battle with Reuther his nephew; upon which the latter was immediately inveſted with the ſovereignty. A bloody war enſued, in which both parties were reduced to the laſt extremity, and glad at length to conclude a peace. The fate of Reuther is not known; but it is generally ſuppoſed that he ended his life in the year 187 B. C.

The reigns of Reutha, Thereus, Jalina, and Finnan,

Scotland. afford no remarkable tranſactions, excepting that under the laſt we find the firſt beginnings of the Scottiſh parliament; as he enacted, that kings ſhould do nothing without the conſent of their grand council.—After him followed Durſtus, Even, and Gillus, whoſe reigns afford nothing of conſequence. Even II. the nephew of Finnan, who ſucceeded Gillus, is ſaid to have built the towns of Innerlochy and Inverneſs. He overcame Belus king of the Orkneys, who had invaded Scotland; and was ſucceeded by his ſon Eder, in whoſe time Julius Cæſar invaded the ſouthern parts of Britain. Eder is ſaid to have aſſiſted the Britons againſt the common enemy. He was ſucceeded, after a reign of 48 years, by his ſon Even III. who is repreſented as a monſter of cruelty and luſt. Not content with having 100 noble concubines of his own, he made a law that a man might marry as many wives as he could maintain; and that the king ſhould have the firſt night with every noble bride, and the nobles the like with the daughters of their tenants. Nor was he leſs remarkable for his cruelty and rapaciouſneſs, which at laſt occaſioned a rebellion; and Even was dethroned, impriſoned, and put to death.

6 A ſcandalous law concerning marriages.

We meet with nothing memorable in the hiſtory of Scotland from this time to that of Agricola, excepting that the famous Caractacus, who was carried priſoner to Rome, is ſaid to have been one of the Scottiſh monarchs; which, however, ſeems not very probable, as the Romans in his time had not penetrated near ſo far as Scotland. The invaſion of Agricola happened during the reign of Corbred, called by the Roman hiſtorians *Galgacus*. Agricola having completed the conqueſt of the ſouthern parts, and in a great meaſure civilized the inhabitants, formed a like plan with regard to Scotland. It is probable, that at this time the Caledonians or Scots were rendered more formidable than ever they had been, by the acceſſion of great numbers from the ſouth; for though the Romans had civilized the greateſt part, it cannot be doubted that many of thoſe ſavage warriors, diſdaining the pleaſures of a peaceable life, would retire to the northward, where the martial diſpoſition of the Scots would better ſuit their inclination. The utmoſt efforts of valour, however, were not proof againſt the diſcipline of the Roman troops, and the experience of their commander. In the third year Agricola had penetrated as far as the river Tay; but the particulars of his progreſs are not recorded. The following year he built a line of forts between the friths of Forth and Clyde, to exclude the Caledonians from the ſouthern parts of the iſland; and the year after, he ſubdued thoſe parts which lay to the ſouth and weſt of his forts, namely, the counties of Galloway, Cantyre, and Argyle, which at that time were inhabited by a people called *Gangi*, though ſome hiſtorians place theſe as far ſouth as Cheſhire in England, and the north part of Wales. This ſuppoſition, however, can ſcarcely be admitted, when we conſider that Tacitus expreſsly informs us, that the people whom Agricola conquered had never before been known to the Romans.

7 Invaſion of Scotland by Agricola.

Agricola ſtill purſued the ſame prudent meaſures by which he had already ſecured the poſſeſſion of ſuch a large tract of country, that is, advancing but ſlowly, and building forts as he advanced, in order to keep the people in obedience. The Scots, though commanded by their king, who is ſaid to have been well acquainted with the manner of fighting and diſcipline of the Romans, were yet obliged to retreat; but at laſt, finding that the enemy made ſuch progreſs as endangered the ſubjugation of the whole country, he reſolved to cut off their communication with the ſouthern parts, and likewiſe to prevent all poſſibility of a retreat by ſea. Agricola, though ſolicited by ſome of his officers, refuſed to retreat; but divided his troops into three bodies, having a communication with each other. Upon this, Galgacus reſolved to attack the weakeſt of the three, which conſiſted only of the ninth legion, and lay at that time, as is ſaid, at a place called *Lochore*, about two miles from Loch-Leven in Fife. The attack was made in the night: and as the Romans were both unprepared and inferior in number, the Scots penetrated into the heart of their camp, and were making a great ſlaughter, when Agricola detached ſome light-armed troops to their aſſiſtance; by whom the Caledonians in their turn were routed, and forced to fly to the marſhes and inacceſſible places, where the enemy could not follow them. Scotland.

This engagement has been magnified by the Roman hiſtorians into a victory, though it can ſcarce be admitted from the teſtimonies of other hiſtorians. The Romans, however, certainly advanced very conſiderably, and the Scots as conſtantly retreated, till they came to the foot of the Grampian mountains, where the Caledonians reſolved to make their laſt ſtand. In the eighth year of the war, Agricola advanced to the foot of the mountains, where he found the enemy ready to receive him. Tacitus has given us a ſpeech of Galgacus, which he has undoubtedly fabricated for him, in which he ſets forth the aſpiring diſpoſition of the Romans, and encourages his countrymen to defend themſelves vigorouſly, as knowing that every thing valuable was at ſtake. A deſperate engagement accordingly enſued. In the beginning, the Britons had the advantage, by the dexterous management of their bucklers: but Agricola having ordered three Tungrian and two Batavian cohorts, armed with ſhort ſwords, and emboſſed bucklers terminating in a point, to attack the Scots, who were armed with long ſwords, the latter ſoon found theſe weapons uſeleſs in a cloſe encounter; and as their bucklers only covered a ſmall part of their bodies, they were eaſily cut in pieces by their adverſaries. The moſt forward of their cavalry and charioteers fell back upon their infantry, and diſordered the centre: but, the Britons endeavouring to out-flank their enemies, the Roman general oppoſed them with his horſe; and the Caledonians were at laſt routed with great ſlaughter, and forced to fly into the woods, whither the Romans purſued with ſo little caution, that numbers of them were cut off. Agricola, however, having ordered his troops to proceed more regularly, prevented the Scots from attacking and cutting off his men in ſeparate parties, as they had expected; ſo that this victory proved the greateſt ſtroke to the Caledonians that they had hitherto received. This battle is ſuppoſed by ſome to have been fought in Strathern, half a mile ſouth from the kirk of Comrie; but others imagine the place to have been near Fortingal-Camp, a place ſomewhat farther on the other ſide of the Tay. 8 Great victory gained by the Romans.

Great as this victory was, it ſeems not to have been pro-

Scotland. productive of any solid or lasting advantage to the Romans; since we find that Agricola, instead of putting an end to the war by the immediate conquest of all Caledonia, retreated into the country of the Foresti, commonly supposed to be Forfarshire, though others imagine it to have been the county of Fife. Here he received hostages from part of the Caledonians; and ordered part of his fleet to sail round Britain, that they might discover whether it was an island or a continent. The Romans no sooner had left that part of the country, than the Caledonians demolished all the forts they had raised: and Agricola being soon after recalled by Domitian, the further progress of the Roman arms was stopped; Galgacus proving superior to any of the successors of that general.

From the time of Agricola to that of Adrian, we know little of the affairs of Scotland, excepting that during this interval the Scots must have entirely driven the Romans out of their country, and reconquered all that tract which lay between Agricola's chain of forts and Carlisle on the west, and Newcastle or Tinmouth-Bar on the east; which Adrian, on visiting Britain, thought proper to fix as the northern boundary of the Roman dominions. Here he built a wall of turf between the mouth of the Tine and the Solway frith, with a view to shut out the barbarians; which, however, did not answer the purpose, nor indeed could it be thought to do so, as it was only built of turf, and guarded by no more than 18,000 men, who could not be supposed a sufficient force to defend such an extent of fortification.

9 Wall built by Adrian.

On the departure of Adrian, he left Julius Severus as his lieutenant: but this man though one of the greatest commanders of his age, did not carry his arms to the northward of Adrian's wall; and this long interval of peace gave so much security to Mogold the Scottish monarch, that he degenerated into a tyrant, and was murdered by some of his noblemen. The only instance of his tyranny which is produced, however, is a law by which it was enacted, that the estates of such as were condemned should be forfeited to his exchequer, without any part thereof being allotted to their wives and children; an act which subsists almost in its full force to this day in Great Britain and the best regulated European government.

In the reign of Antoninus Pius, the propretor Lollius Urbius drove the Scots far to the northward, and repaired the chain of forts built by Agricola, which lay between the Carron on the frith of Forth and Dunglass on the Clyde. These were joined together by turf walls, and formed a much better defence than the wall of Adrian. However, after the death of Antoninus, Commodus having recalled Calpurnius Agricola, an able commander, who kept the Scots in awe, a more dangerous war broke out than had ever been experienced by the Romans in that quarter. The Scots having passed the wall, put all the Romans they could meet with to the sword: but they were soon repulsed by Ulpius Marcellus, a general of consummate abilities, whom Commodus sent into the island.—In a short time the tyrant also recalled this able commander. After his departure, the Roman discipline in Britain suffered a total relaxation; the soldiery grew mutinous, and great disorders ensued: but these were all happily removed by the arrival of Clodius Albinus, a person of great skill and experience in military affairs. His presence for some time restrained the Scots within proper bounds: but a civil war breaking out between him and Severus, Albinus crossed over to the continent with the greatest part of the Roman forces in Britain; and meeting his antagonist at Lyons, a dreadful battle ensued, in which Albinus was utterly defeated, and his army cut in pieces. See Rome, n° 375. Scotland.

10 Wars of Severus with the Scots.

The absence of the Roman forces gave encouragement to the Scots to renew their depredations, which they did with such success, that the emperor became apprehensive of losing the whole island; on which he determined to go in person and quell these troublesome enemies. The army he collected upon this occasion was far more numerous than any the Romans had ever sent into Britain; and being commanded by such an able general as Severus, it may easily be supposed that the Scots must have been very hard pressed. The particulars of this important expedition are very imperfectly related; however, we are assured that Severus lost a vast number of men, it is said not less than 50,000, in his march through Scotland. Notwithstanding, he penetrated, it is said, to the most northern extremity of the island, and obliged the enemy to yield up their arms. On his return, he built a much stronger fortification to secure the frontiers against the enemy than had ever been done before, and which in some places coincided with Adrian's wall, but extended farther at each end. But in the mean time, the Scots, provoked by the brutality of the emperor's son Caracalla, whom he had left regent in his absence, again took arms: on which Severus himself took the field, with a design, as it would seem, to extirpate the whole nation; for he gave orders to his soldiers "not to spare even the child in the mother's belly." The event of his furious declaration is unknown: but in all probability the death of the emperor, which happened soon after, put a stop to the execution of this revenge; and it is certain that his son Caracalla, who succeeded Severus, ratified the peace with the Scots.

During all these important transactions, Scotland was governed by Donald I. who is said to have been the first Christian king of this country. From him to the time of Eugene I. no remarkable occurrence offers; but under the latter, the Roman and Pictish forces were united against the Scots. The Picts were commanded by their king, named *Hargal*; and the Romans by Maximus, who murdered Valentinian III. and afterwards assumed the empire. The allies defeated Eugene in the county of Galloway; but Maximus being obliged to return southward on account of an insurrection, the Picts were in their turn defeated by the Scots. Next year, however, Maximus marched against the Scots; who being now reduced to extremity, brought into the field not only all the men capable of bearing arms, but the women also. In this engagement the Picts would have been utterly defeated, had not they been supported by the Romans; but Eugene being killed, with the greatest part of his nobility, the Scots were defeated; and so well did the conquerors improve their victory, that their antagonists were at last totally driven out of the country. Some of them took refuge in the Hebrides, and some in Scandinavia and Ireland, from whence they made frequent descents upon Scotland. The Picts were at first might by planted

11 Expulsion of the Scots by Maximus. See Rome, n° 536.

with

with the victory they had gained over their antagoniſts: but being commanded to adopt the laws of the Romans, and to chooſe no king who was not ſent them from Rome, they began to repent of their having contributed to the expulſion of the Scots; and in the year 421, when Autulphus king of the Goths ſent over a body of exiled Scots to Britain, under Fergus, a deſcendant of the royal family of Scotland, the Picts immediately joined them againſt the common enemy. The conſequence of this was, that the Britons were puſhed to the laſt extremity; and the Romans being obliged, on account of the inundation of northern barbarians who poured in upon them, to recal their forces from Britain, the inhabitants were reduced to the moſt miſerable ſituation that can be imagined. In the time of Fergus II. they were obliged to give up all the country which lies to the north of Adrian's wall; and the reign of Grimus or Graham, the ſucceſſor of Fergus, they were obliged to write that remarkable letter to Rome, intitled, "The groans of the Britons †." This, however, not being attended with ſucceſs, the Britons were obliged to call in the Saxons to their aſſiſtance. By theſe new allies the Scots were defeated in a great battle, and their king (Eugene) drowned in the river Humber; which put a ſtop for ſome time to theſe incurſions.

12 They return under Fergus II.

† See England, p. 27.

Hitherto we have ſeen the Scots very formidable enemies to the ſouthern Britons. But when the Saxons became the enemies of the Britons, the Scots joined in a ſtrict alliance with the latter; and the famous king Arthur is ſaid to have been aſſiſted by the Scots in all his battles with the Saxons: neither does it appear that this league was ever diſſolved again, though the united efforts of the Scots and Britons were not ſufficient to preſerve the independency of the latter.

13 War with the Picts.

The next remarkable event in the hiſtory of Scotland is the war with the Picts, which took place in the ninth century. The occaſion of the quarrel was, that Dongal king of Scotland pretended a right to the Pictiſh throne; which, however, was rejected by the Picts: upon which both parties had recourſe to arms; but when every thing was ready for the campaign, Dongal was drowned in croſſing the river Spey.

At this time the dominions of the Scots comprehended the weſtern iſlands, together with the counties of Argyle, Knapdale, Kyle, Kintyre, Lochaber, and a part of Breadalbane; while the Picts poſſeſſed all the reſt of Scotland, and part of Northumberland; ſo that the Picts ſeem to have been by much the moſt powerful people of the two. However, the Scots appear to have been ſuperior in military ſkill; for Alpin, the ſucceſſor of Dongal, having engaged the Pictiſh army near Forfar, after an obſtinate engagement defeated them, and killed their king, though not without the loſs of a great number of his own men. The Picts choſe Brudus, the ſon of their former king, to ſucceed him; but ſoon after depoſed and put him to death, on account of his ſtupidity and indolence. His brother Kenneth ſhared the ſame fate on account of his cowardice; till at laſt another Brudus, a brave and ſpirited prince, aſcended the throne. Having raiſed a powerful army, he began with offering terms of peace to the Scots; which, however, Alpin rejected, and inſiſted upon a total ſurrender of his crown. Brudus on this endeavoured to procure the aſſiſtance of Edwin king of Northumberland. Edwin accepted the money; but pretending to be engaged in other wars, he refuſed the aſſiſtance which he at firſt promiſed. Brudus, not diſmayed by this diſappointment, marched reſolutely againſt his enemies; and the two armies came to an engagement near Dundee. The ſuperior ſkill of the Scots in military affairs was about to have decided the victory in their favour, when Brudus bethought himſelf of the following ſtratagem to preſerve his army from deſtruction. He cauſed all the attendants, and even the women who attended his army, to aſſemble and ſhow themſelves at a diſtance as a powerful reinforcement coming to the Picts. This ſtruck the Scots with ſuch a panic, that all the efforts of Alpin could not recover them; and they were accordingly defeated with great ſlaughter. Alpin himſelf was taken priſoner, and ſoon after beheaded by order of the conqueror. This execution happened at a place now called *Pit-alpy*, but in former times *Bas-alpin*, which in the Gaelic language ſignifies the *death of Alpin*. His head was afterwards ſtuck upon a pole, and expoſed on a wall.

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14 The Scots defeated, and their king killed.

Alpin was ſucceeded by his ſon Kenneth II. who being a brave and enterpriſing prince, reſolved to take a moſt ſevere revenge for his father's death. The Scots, however, were ſo diſpirited by their late defeat, that they were exceedingly averſe to any renewal of the war: while, on the other hand, the Picts were ſo much elated, that they made a law by which it became death for any man to propoſe peace with the Scots, whom they reſolved to exterminate; and ſome of the nobility were expelled the council on account of their oppoſition to this law. The conſequence of this was, that civil diſſenſions took place among them, and a bloody battle was fought between the oppoſite parties, before the Scots had thought of making any further reſiſtance.

By theſe diſtractions Brudus, who had in vain endeavoured to appeaſe them, was ſo much affected, that he died of grief; and was ſucceeded by his brother Druſken.—The new prince alſo failed in his endeavours to accommodate the civil differences; ſo that the Scots, by gaining ſo much reſpite, at laſt began to recover from their conſternation; and ſome of them having ventured into the Pictiſh territories, carried off Alpin's head from the capital of their dominions, ſuppoſed to have been Abernethy. In the mean time, Kenneth found means to gain over the nobility to his ſide by the following ſtratagem; which, however ridiculous, is not incredible, if we conſider the barbariſm and ſuperſtition of that age. Having invited them to an entertainment, the king introduced into the hall where they ſlept a perſon clothed in a robe made of the ſkins of fiſhes, which made ſuch a luminous appearance in the dark, that he was miſtaken for an angel or ſome ſupernatural meſſenger. To add to the terror of thoſe who ſaw him, he denounced, through a ſpeaking trumpet, the moſt terrible judgments, if war was not immediately declared againſt the Picts, the murderers of the late king. In conſequence of this celeſtial admonition, war was immediately renewed with great vigour. The Picts were not deficient in their preparations, and had now procured ſome aſſiſtance from England. The firſt battle was fought near Stirling; where the Picts, being deſerted by their Engliſh auxiliaries, were utterly defeated. Druſken eſcaped by the ſwiftneſs

15 Stratagem of Kenneth to renew the war.

Scotland. neſs of his horſe, and a few days after made application to Kenneth for a ceſſation of hoſtilities; but as the Scottiſh monarch demanded a ſurrender of all the Pictiſh dominions, the treaty was inſtantly broken off. Kenneth purſued his good fortune, and conquered the counties of Merns, Angus, and Fife; but as he marched againſt Stirling, he received intelligence that theſe counties had again revolted, and cut off all the garriſons which he had left, and that Druſken was at the head of a conſiderable army in theſe parts. On this Kenneth haſtened to oppoſe him, and a negociation again took place. The reſult was equally unfavourable with the reſt. Kenneth inſiſted on an abſolute ſurrender of the counties of Fife, Merns, and Angus; which being refuſed, both parties prepared for a deciſive battle. The engagement was very bloody and deſperate, the Picts fighting like men in deſpair. Druſken renewed the battle ſeven times; but at laſt was entirely defeated and killed, and the counties in diſpute became the immediate property of the conqueror.

Kenneth did not fail to improve his victory, by reducing the reſt of the Pictiſh territories; which he is ſaid to have done with the greateſt cruelty, and even to have totally exterminated the inhabitants. The capital, called *Camelon* (ſuppoſed to have been Abernethy), held out four months; but was at laſt taken by ſurpriſe, and every living creature deſtroyed. This was followed by the reduction of the Maiden Caſtle, now that of Edinburgh; which was abandoned by the garriſon, who fled to to Northumberland.

After the reduction of theſe important places, the reſt of the country made no great reſiſtance, and Kenneth became maſter of all the kingdom of Scotland in the preſent extent of the word; ſo that he is juſtly to be eſteemed the true founder of the Scottiſh monarchy. Beſides this war with the Picts, Kenneth is ſaid to have been ſucceſsful againſt the Saxons, though of theſe wars we have very little account. Having reigned 16 years in peace after his ſubjugation of the Picts, and compoſed a code of laws for the good of his people, Kenneth died of a fiſtula, at Fort Teviot, near Duplin in Perthſhire. Before his time the ſeat of the Scots government had been in Argyleſhire; but he removed it to Scone, by transferring thither the famous black ſtone ſuppoſed to be the palladium of Scotland, and which was afterwards carried off by Edward I. of England, and lodged in Weſtminſter abbey.

Kenneth was ſucceeded by his brother Donald, who is repreſented as a man of the worſt character; ſo that the remaining Picts who had fled out of Scotland were encouraged to apply to the Saxons for aſſiſtance, promiſing to make Scotland tributary to the Saxon power after it ſhould be conquered. This propoſal was accepted; and the confederates invaded Scotland with a powerful army, and took the town of Berwick; however, they were ſoon after defeated by Donald, who took alſo their ſhips and proviſions. This capture proved their ruin; for ſome of the ſhips being loaden with wine, the Scots indulged themſelves ſo much with that liquor, that they became incapable of defending themſelves; the conſequence of this was, that the confederates rallying their troops, attacked them in that ſtate of intoxication. The Scots were defeated with exceſſive ſlaughter. Twenty thouſand of the common ſoldiers lay dead on the ſpot; the king and his principal nobility were taken priſoners; and all the country Scotland. from the Tweed to the Forth became the property of the conquerors. Still, however, the confederates found themſelves unable to purſue their victory farther; and a peace was concluded, on condition that the Saxons ſhould become maſters of all the conquered country. Thus the Forth and Clyde became the ſouthern boundaries of the Scottiſh dominions. It was agreed that the Forth ſhould from that time forward be called the *Scots ſea*; and it was made capital for any Scotſman to ſet his foot on Engliſh ground. They were to erect no forts near the Engliſh confines, to pay an annual tribute of a thouſand pounds, and to give up 60 of the ſons of their chief nobility as hoſtages. A mint was erected by the Saxon prince named *Oſbreth*, at Stirling; and a croſs raiſed on the bridge at that place, with the following inſcription, implying that this place was the boundary between Scotland and England:

Anglos a Scotis ſeparat crux iſta renatis:
Arma hici ſtant Bruti, ſtant Scoti ſub hac cruce tuti.

After the concluſion of this treaty, ſo humiliating to the Scots, the Picts, finding that their intereſt had been entirely neglected, fled to Norway, while thoſe who remained in England were maſſacred. Donald ſhared the common fate of unfortunate princes, being dethroned and ſhut up in priſon, where he at laſt put an end to his own life in the year 858.—In juſtice to this unhappy monarch, however, it muſt be obſerved, that the character of Donald, and indeed the whole account of theſe tranſactions, reſts on the credit of a ſingle author, namely Boece; and that other writers repreſent Donald as a hero, and ſucceſsful in his wars: but the obſcurity in which the whole of this period of Scottiſh hiſtory is involved, renders it impoſſible to determine any thing ſatisfactory concerning theſe matters.

Donald was ſucceeded by his nephew Conſtantine, the ſon of Kenneth Mac Alpin, in whoſe reign Scotland was firſt invaded by the Danes, who proved ſuch formidable enemies to the Engliſh. This invaſion is ſaid to have been occaſioned by ſome exiled Picts who fled to Denmark, where they prevailed upon the king of that country to ſend his two brothers, Hungar and Hubba, to recover the Pictiſh dominions from Con- 17
ſtantine. Theſe princes landed on the coaſt of Fife, and the Danes.
where they committed the moſt horrid barbarities, not ſparing even the eccleſiaſtics who had taken refuge in the iſland of May at the mouth of the Forth. Conſtantine defeated one of the Daniſh armies commanded by Hubba, near the water of Leven; but was himſelf defeated and taken priſoner by Hungar, who cauſed him to be beheaded at a place ſince called the *Devil's Cave*, in the year 874.

This unfortunate action coſt the Scots 10,000 men: but the Danes ſeem not to have purchaſed their victory very eaſily, as they were obliged immediately afterwards to abandon their conqueſts, and retire to their own country. However, the many Daniſh monuments that are ſtill to be ſeen in Fife, [illegible] many bloody ſcenes have been acted here between the Scots and Danes beſides that abovementioned.

Conſtantine was ſucceeded by his brother Eth, ſurnamed the *Swift-footed*, from his agility. Concerning him we find nothing memorable; indeed the accounts are ſo confuſed and contradictory, that it is impoſſible to

16 The Scots defeated by the Saxons.

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to form any decisive opinion concerning the transactions of this reign. All agree, however, that it was but short; and that he was succeeded by Gregory the son of Dongal, contemporary with Alfred of England, and that both princes deservedly acquired the name of *Great*.

18 Exploits of Gregory the Great.

The Danes at their departure had left the Picts in possession of Fife. Against them Gregory immediately marched, and quickly drove them into the north of England, where their confederates were already masters of Northumberland and York. In their way thither they threw a garrison into the town of Berwick; but this was presently reduced by Gregory, who put to the sword all the Danes, but spared the lives of the Picts. From Berwick, Gregory pursued the Danes into Northumberland, where he defeated them; and passed the winter in Berwick. He then marched against the Cumbrians, who being mostly Picts were in alliance with the Danes. Them he easily overcame, and obliged to yield up all the lands they had formerly possessed belonging to the Scots, at the same time that he agreed to protect them from the power of the Danes. In a short time, however, Constantine the king of the Cumbrians violated the convention he had made, and invaded Annandale; but was defeated and killed by Gregory near Lochmaben. After this victory Gregory entirely reduced the counties of Cumberland and Westmoreland, which, it is said, were ceded to him by Alfred the Great; and indeed the situation of Alfred's affairs at this time renders such a cession by no means improbable.

We next find Gregory engaged in a war with the Irish, to support Donach, an Irish prince, against two rebellious noblemen. The Irish were the first aggressors, and invaded Galloway; but being repulsed with great loss, Gregory went over to Ireland in person, where the two chieftains, who had been enemies to each other before, now joined their forces in order to oppose the common enemy. The first engagement proved fatal to one of their chiefs named *Brian*, who was killed with a great number of his followers. After this victory Gregory reduced Dundalk and Drogheda. On his way to Dublin he was opposed by a chieftain named *Cornell*, who shared the fate of his confederate, being also killed, and his army entirely defeated. Gregory then became guardian to the young prince whom he came to assist, appointed a regency, and obliged them to swear that they would never admit into the country either a Dane or an Englishman without his consent. Having then placed garrisons in the strongest fortresses, he returned to Scotland, where he built the city of Aberdeen; and died in the year 892, at his castle of Dundore in the Garioch.

19 Donald III.

Gregory was succeeded by Donald III. the son of Constantine, who imitated the virtues of his predecessor. The Scots historians unanimously agree that Northumberland was at that time in the hands of their countrymen; while the English as unanimously affirm that it was subject to the Danes, who paid homage to Alfred. Be this as it will, however, Donald continued to live on good terms with the English monarch, and sent him a body of forces, who proved of considerable advantage to him in his wars with the Danes. The reign of Donald was but short; for having marched against some robbers (probably no other than the Danes) who had invaded and ravaged the counties of Murray and Ross, he died at Forres soon after, having defeated and subdued them in the year 903. He was succeeded by Constantine III. the son of Eth the Swift-footed, concerning whom the most remarkable particular we find related is his entering into an alliance with the Danes against the English. The occasion of this confederacy is said to have been, that the English monarch, Edward the Elder, finding the Scots in possession of the northern counties of England, made such extravagant demands upon Constantine as obliged him to ally with the Danes in order to preserve his dominions in security. However, the league subsisted only for two years, after which the Danes found it more for their advantage to resume their ancient friendship with the English.

20 Constantine III enters into an alliance with the Danes against England.

As soon as Constantine had concluded the treaty with the Danes, he appointed the presumptive heir to the Scottish crown, Malcolm, or, according to some, Eugene the son of the late king Donald, prince of the southern counties, on condition of his defending them against the attacks of the English. The young prince had soon an opportunity of exerting his valour: but not behaving with the requisite caution, he had the misfortune to be defeated, with the loss of almost all his army, he himself being carried wounded out of the field; and in consequence of this disaster, Constantine was obliged to do homage to Edward for the possessions he had to the southward of the Scots boundary.

In the beginning of the reign of Athelstan the son of Edward the Elder, the northern Danes were encouraged by some conspiracies formed against that monarch to throw off the yoke; and their success was such, that Athelstan thought proper to enter into a treaty with Sithric the Danish chief, and to give him his daughter in marriage. Sithric, however, did not long survive his nuptials; and his son Guthred, endeavouring to throw off the English yoke, was defeated, and obliged to fly into Scotland. This brought on a series of hostilities between the Scots and English, which in the year 938 issued in a general engagement. At this time the Scots, Irish, Cumbrians, and Danes, were confederated against the English. The Scots were commanded by their king Constantine, the Irish by Anlaf the brother of Guthred the Danish prince, the Cumbrians by their own sovereign, and the Danes by Froda. The generals of Athelstan were Edmund his brother, and Turketil his favourite. The English attacked the entrenchments of the confederates, where the chief resistance they met with was from the Scots. Constantine was in the utmost danger of being killed or taken prisoner, but was rescued by the bravery of his soldiers: however, after a most obstinate engagement, the confederates were defeated with such slaughter, that the slain are said to have been *innumerable*. The consequence of this victory was, that the Scots were deprived of all their possessions to the southward of the Forth; and Constantine, quite dispirited with his misfortune, resigned the crown to Malcolm, and retired to the monastery of the Culdees at St Andrew's, where he died five years after, in 943.

21 Is utterly defeated by the English.

The distresses which the English sustained in their subsequent wars with the Danes gave the Scots an opportunity of retrieving their affairs; and in the year 944, we find Malcolm, the successor of Constantine, invested with the sovereignty of Northumberland, on condition

Scotland.

dition of his holding it as fief of the crown of England, and aſſiſting in defence of the northern border. Soon after the concluſion of this treaty Malcolm died, and was ſucceeded by his ſon Indulfus. In his reign the Danes became extremely formidable by their invaſions, which they now renewed with greater fury than ever, being exaſperated by the friendſhip ſubſiſting between the Scots and Engliſh monarchs. Their firſt deſcent was upon Eaſt Lothian, where they were ſoon expelled, but croſſed over to Fife. Here they were a ſecond time defeated, and driven out; and ſo well had Indulfus taken care to guard the coaſts, that they could not find an opportunity of landing; till having ſeemed to ſteer towards their own country, the Scots were thrown off their guard, and the Danes on a ſudden made good their landing at Cullen, in Banffſhire. Here Indulfus ſoon came up with them, attacked their camp, and drove them towards their ſhips, but was killed in an ambuſcade, into which he fell during the purſuit. He was ſucceeded by Duffus, to whom hiſtorians give an excellent character; but, after a reign of five years, he was murdered in the year 965. He was ſucceeded by Culen the ſon of Indulfus, who had been nominated prince of Cumberland in his father's lifetime, as heir-apparent to the throne. He is repreſented as a very degenerate prince; and is ſaid to have given himſelf up to ſenſuality in a manner almoſt incredible, being guilty of incontinence not only with women of all ranks, but even with his own ſiſters and daughters. The people in the mean time were fleeced, in order to ſupport the extravagance and luxury of their prince. In conſequence of this, an aſſembly of the ſtates was convened at Scone for the reſettling of the government; but on his way thither Culen was aſſaſſinated, near the village of Methven, by Rohard, thane or ſheriff of Fife, whoſe daughter the king had debauched.

22 New invaſions of the Danes.

23 Kenneth III a wiſe and valiant prince

The provocations which Culen had given to his nobility ſeem to have rendered them totally untractable and licentious; which gave an occaſion to a remarkable revolution in the reign of Kenneth III. who ſucceeded Culen. This prince, being a man of great reſolution, began with relieving the common people from the oppreſſions of the nobility, which were now intolerable; and this plan he purſued with ſo much ſucceſs, that having nothing to fear from the great barons, he ordered them to appear before him at Lanerk; but the greateſt part, conſcious of their demerits, did not attend. The king ſo well diſſembled his diſpleaſure, that thoſe who came were quite charmed with his affability, and the noble entertainment he gave them; in conſequence of which, when an aſſembly was called next year, the guilty were encouraged to appear as well as the innocent. No ſooner had this aſſembly met, however, than the place of meeting was beſet with armed men. The king then informed them that none had any thing to apprehend excepting ſuch as had been notorious offenders; and theſe he ordered to be immediately taken into cuſtody, telling them, that their ſubmitting to public juſtice muſt be the price of their liberty. They were obliged to accept the king's offer, and the criminals were accordingly puniſhed according to their deſerts.

About this time Edgar, king of England, finding himſelf hard preſſed by the Danes, found means to unite the king of Scotland and the prince of Cumberland along with himſelf in a treaty againſt the Danes; which gave occaſion to a report that Kenneth had become tributary to the king of England. This, however, is utterly denied by all the Scots hiſtorians; who affirm that Kenneth cultivated a good correſpondence with Edgar, as well becauſe he expected aſſiſtance in defending his coaſts, as becauſe he intended entirely to alter the mode of ſucceſſion to the throne. About this time the Danes made a dreadful invaſion. Their original intention ſeems to have been to land on ſome part of the Engliſh coaſts; but finding them probably too well guarded, they landed at Montroſe in Scotland, committing everywhere the moſt dreadful ravages. Kenneth at that time was at Stirling, and quite unprepared; however, having collected an handful of troops, he cut off many of the enemy as they were ſtraggling up and down, but could not prevent them from beſieging Perth. Nevertheleſs, as the king's army conſtantly increaſed, he reſolved to give the enemy battle. The ſcene of this action was at Loncarty, near Perth. The king is ſaid to have offered ten pounds in ſilver, or the value of it in land, for the head of every Dane which ſhould be brought him; and an immunity from all taxes to the ſoldiers who ſerved in his army, provided they ſhould be victorious: but, notwithſtanding the utmoſt efforts of the Scots, their enemies fought ſo deſperately, that Kenneth's army muſt have been totally defeated, had not the fugitives been ſtopped by a yeoman and his two ſons of the name of *Hay*, who were coming up to the battle, armed with ſuch ruſtic weapons as their condition in life afforded. Buchanan and Boece inform us, that theſe countrymen were ploughing in a field hard by the ſcene of action, and perceiving that their countrymen fled, they looſed their oxen, and made uſe of the yokes as weapons, with which they firſt obliged their countrymen to ſtand, and then annoyed their enemies. The fight was now renewed with ſuch fury on the part of the Scots, that the Danes were utterly defeated; and, after the battle, the king rewarded Hay with the barony of Errol in the Carſe of Gowrie, ennobled his family, and gave them an armorial bearing alluding to the ruſtic weapons with which they had atchieved this glorious exploit.

Scotland.

24 Defeats the Danes.

25 Riſe of the family of Errol.

In the year 994, Kenneth was murdered at the inſtigation of a lady named *Fenella*, whoſe ſon he had cauſed to be put to death. The murder was perpetrated in Fenella's caſtle, where ſhe had perſuaded the king to pay her a viſit. His attendants waited long near the place; but being at length tired out, they broke open the doors, and found their king murdered: upon which they laid the caſtle in aſhes; but Fenella eſcaped by a poſtern. The throne was then ſeized by an uſurper named *Eugenius*; who, being killed in battle after a reign of a year and an half, was ſucceeded by Grime, the grandſon of king Duffus; and he again was defeated and killed by Malcolm the ſon of Kenneth, the lawful heir of the Scottiſh throne. After this victory, however, Malcolm did not immediately aſſume the ſovereignty; but aſked the crown from the nobles, in conſequence of a law paſſed in the reign of Kenneth, by which the ſucceſſion to the throne of Scotland became hereditary. This they immediately granted, and Malcolm was accordingly crowned king. He joined himſelf in ſtrict alliance with the king of England; and proved ſo ſucceſsful againſt the Danes in England, that

29 Kenneth murdered.

Scotland. Sweyn their king reſolved to direct his whole force againſt him by an invaſion of Scotland. His firſt attempt, however, proved very unſucceſsful; all his ſoldiers being cut in pieces, except ſome few who eſcaped to their ſhips, while the loſs of the Scots amounted to no more than 30 men. But in the mean time, Duncan, prince of Cumberland, having neglected to pay his homage to the king of England, the latter invaded that country in conjunction with the Danes. Malcolm took the field againſt them, and defeated both; but while he was thus employed in the ſouth, a new army of Danes landed in the north at the mouth of the river Spey. Malcolm advanced againſt them with an army much inferior in number; and his men, neglecting every thing but the blind impulſes of fury, were almoſt all cut to pieces; Malcolm himſelf being deſperately wounded.

27 The Scots defeated by the Danes.

By this victory the Danes were ſo much elated, that they ſent for their wives and children, intending to ſettle in the country. The caſtle of Nairn, at that time thought almoſt impregnable, fell into their hands; and the towns of Elgin and Forres were abandoned both by their garriſons and inhabitants. The Scots were everywhere treated as a conquered people, and employed in the moſt ſervile offices by the haughty conquerors; who, to render the caſtle of Nairn, as they thought, abſolutely impregnable, cut through the ſmall iſthmus which joined it to the land. All this time, however, Malcolm was raiſing forces in the ſouthern counties; and having at laſt got an army together, he came up with the Danes at Murtloch, near Balveny, which appears at this day to have been a ſtrong Daniſh fortification. Here he attacked the enemy; but having the misfortune to loſe three of his general officers, he was again obliged to retreat. However, the Daniſh general happening to be killed in the purſuit, the Scots were encouraged to renew the fight with ſuch vigour, that they obtained at laſt a complete victory; but ſuffered ſo much, that they were unable to derive from it all the advantages which might otherwiſe have accrued.

28 But defeat them in a ſecond battle.

On the news of this ill ſucceſs, Sweyn ordered two fleets, one from England and another from Norway, to make a deſcent upon Scotland, under the command of Camus, one of his moſt renowned generals. The Danes attempted to land at the mouth of the Forth; but finding every place there well fortified, they were obliged to move farther northward, and effected their purpoſe at Redhead in the county of Angus. The caſtle of Brechin was firſt beſieged; but meeting with a ſtout reſiſtance there, they laid the town and church in aſhes. From thence they advanced to the village of Pambride, and encamped at a place called *Karloddo*. Malcolm in the mean time was at hand with his army, and encamped at a place called *Barr*, in the neighbourhood of which both parties prepared to decide the fate of Scotland; for as Moray and the northern provinces were already in the poſſeſſion of the Danes, it was evident that a victory at this time muſt put them in poſſeſſion of the whole. The engagement was deſperate, and ſo bloody, that the rivulet which proceeds from Loch Tay is ſaid to have had its water dyed with the blood of the ſlain; but at laſt the Danes gave way and fled. There was at that time in the army of Malcolm, a young prince of the name of *Keith* (A). He purſued Camus; and having overtaken him, engaged and killed him; but another Scots officer coming up at the ſame time, diſputed with Keith the glory of the action. While the diſpute laſted, Malcolm came up; who ſuffered them to decide it by ſingle combat. In this ſecond combat Keith proved alſo victorious, and killed his antagoniſt. The dying perſon confeſſed the juſtice of Keith's claim; and Malcolm dipping his finger in his blood marked the ſhield of Keith with three ſtrokes, pronouncing the words *Veritas vincit*, "Truth overcomes," which has ever ſince been the armorial bearing and motto of the family of Keith (B).

Scotland. 29 The Danes again defeated.

30 Riſe of the family of Keith.

The ſhattered remains of the Daniſh forces reached their ſhips; but being driven back by contrary winds, and proviſions becoming ſcarce, they put aſhore 500 men on the coaſt of Buchan, to procure them ſome food: but their communication with the ſhips being ſoon cut off, they fortified themſelves as well as they could, and made a deſperate reſiſtance; but at laſt were all put to the ſword. The place where this maſſacre happened is ſtill called *Crudane*; being probably an abbreviation of *Cruor Danorum*, the blood of the Danes, a name impoſed on it by the eccleſiaſtics of thoſe days.

Sweyn, not yet diſcouraged, ſent his ſon Canute, afterwards king of England, and one of the greateſt warriors of that age, into Scotland, with an army more powerful than any that had yet appeared. Canute landed in Buchan; and, as the Scots were much weakened by ſuch a long continued war, Malcolm thought proper to act on the defenſive. But the Scots, who now thought themſelves invincible, demanded to be led on to a general engagement. Malcolm complied with their deſire, and a battle enſued; in which though neither party had much reaſon to boaſt of victory, the Danes were ſo much reduced, that they willingly concluded a peace on the following terms, viz. That the Danes ſhould immediately depart Scotland; that as long as Malcolm and Sweyn lived, neither of them ſhould wage war with the other, or help each others enemies; and

31 Another invaſion.

32 Peace concluded.

(A) This prince is ſaid to have commanded a colony of the Catti, a German nation who ſettled in the northmoſt part of Scotland, and from whom the county of Caithneſs takes its name.

(B) Mr Gordon, in his *Itinerarium Septentrionale*, obſerves, that in all probability the Scots gained two victories over the Danes on the preſent occaſion; one near the place called *Karboldo*, already mentioned; and the other at Aberlemno, four miles from Brechin. At both places there are monuments with rude ſculptures, erected moſt probably in memory of a victory. That at Karboddo is called *Camus's croſs*; near which, ſomewhat more than a century ago, a large ſepulchre, ſuppoſed to be that of Camus, was diſcovered. It conſiſted of four great ſtones; and had in it a huge ſkeleton, ſuppoſed to be that of the Daniſh prince. The fatal ſtroke ſeemed to have been given him on the back part of the head; a conſiderable portion of the ſkull being cut away, probably by the ſtroke of the ſword.

Scotland. and that the field in which the battle was fought ſhould be ſet apart and conſecrated for the burial of the dead. Theſe ſtipulations were punctually fulfilled by Malcolm, who built in the neighbourhood a chapel dedicated to Olaus, the tutelar ſaint of theſe northern nations.

After all theſe glorious exploits, and becoming the ſecond legiſlator in the Scottiſh nation, Malcolm is ſaid to have ſtained the latter part of his reign with avarice and oppreſſion; in conſequence of which he was mur-
33 Malcolm aſſaſſinated. dered at the age of 80 years, after he had reigned above 30. This aſſaſſination was perpetrated when he was on his way to Glamis. His own domeſtics are ſaid to have been privy to the murder, and to have fled along with the conſpirators; but in paſſing the lake of Forfar on the ice, it gave way with them, and they were all drowned, their bodies being diſcovered ſome days after. The latter part of this account is confirmed by the ſculptures upon ſome ſtones erected near the ſpot; one of which is ſtill called *Malcolm's grave-ſtone*; and all of them exhibit ſome rude repreſentations of the murder and the fate of the aſſaſſins.

34 Duncan I. Malcolm was ſucceeded, in the year 1034, by his grandſon Duncan I. but he is ſaid to have had another grandſon, the famous Macbeth; though ſome are of opinion that Macbeth was not the grandſon of Malcolm, but of Fenella who murdered Kenneth III. The firſt years of Duncan's reign were paſſed in tranquillity, but domeſtic broils ſoon took place on the following occaſion. Banquo, thane of Lochaber, and anceſtor to the royal family of Stuart, acted then in the capacity of ſteward to Duncan, by collecting his rents; but being very rigid in the execution of his office, he was way-laid, robbed, and almoſt murdered. Of this outrage Banquo complained as ſoon as he recovered of his wounds and could appear at court. The robbers were ſummoned to ſurrender themſelves to juſtice; but inſtead of obeying, they killed the meſſenger. Macbeth repreſented this in ſuch ſtrong terms, that he was ſent with an army to reduce the inſurgents, who had already deſtroyed many of the king's friends. This commiſſion he performed with ſuch ſucceſs, that the rebel chief put an end to his own life; after which Macbeth ſent his head to the king, and then proceeded with the utmoſt ſeverity againſt the inſurgents, who were compoſed of Iriſhmen, Iſlanders, and Highlanders.

35 A new invaſion by the Danes. This inſurrection was ſcarcely quelled, when the Danes landed again in Fife; and Duncan put himſelf at the head of an army, having the thanes Macbeth and Banquo ſerving under him. The Danes were commanded by Sweyn king of Norway, and eldeſt ſon of Canute. He proceeded with all the barbarity natural to his nation, putting to death men, women, and children who fell in his way. A battle was fought between the two nations near Culroſs, in which the Scots were defeated: but the Danes purchaſed their victory ſo dearly, that they could not improve it; and Duncan retreated to Perth, while Macbeth was ſent to raiſe more forces. In the mean time Sweyn laid ſiege to Perth, which was defended by Duncan and Banquo. The Danes were ſo much diſtreſſed for want of proviſions, that they at laſt conſented to treat of a peace, provided the preſſing neceſſities of the army were relieved. The Scots hiſtorians inform us, that this treaty was ſet on foot in order to amuſe Sweyn, and gain time for the ſtratagem which Duncan was preparing. This was no other than a barbarous contrivance of infuſing intoxicating herbs into the liquors that were ſent along with the other proviſions to the Daniſh camp. Theſe ſopoRifics had their intended effect; and while the Danes were under their influence, Macbeth and Banquo broke into their camp, where they put all to the ſword, and it was with difficulty that ſome of Sweyn's attendants carried him on board; and we are told that his was the only ſhip of all the fleet that returned to Norway. It was not long, however, before a freſh body of Danes landed at Kinghorn in the county of Fife: but they were entirely defeated by Macbeth and Banquo. Such of the Danes as eſcaped fled to their ſhips; but before they departed they obtained leave to bury their dead in Inchcolm, a ſmall iſland lying in the Forth, where one of their monuments is ſtill to be ſeen. Scotland. 36 Who are defeated.

Thus ended the formidable invaſions of the Danes; after which Duncan applied himſelf to the adminiſtration of juſtice, and the reformation of the manners of his ſubjects. Macbeth, however, who had obtained great reputation by his ſucceſs againſt the Danes, began to form ambitious deſigns, and to aſpire to the crown itſelf. The fables relating to his uſurpation are ſo well known from the tragedy compoſed by Shakeſpeare which bears the name of *Macbeth*, that we ſhall not take notice of them here; but only obſerve, that at laſt Duncan, not knowing he had ſo dangerous an enemy near his perſon, whoſe ſchemes required to be watched, was murdered at Inverneſs by Macbeth, who ſucceeded him in the throne. 37 Duncan murdered by Macbeth, who aſſumes the throne.

During the greateſt part of the reign of the uſurper, Malcolm, the true heir to the crown of Scotland, kept cloſe in his principality of Cumberland, without any thoughts of aſcending his father's throne. Macbeth for ſome time governed with moderation, but at laſt became a tyrant. Becoming jealous of Banquo, the moſt powerful ſubject in his dominions, he invited him to an entertainment, and cauſed him to be treacherouſly murdered. His ſon Fleance was deſtined to the ſame fate, but eſcaped to Wales. After him Macduff, the thane of Fife, was the moſt powerful perſon in Scotland; for which reaſon, Macbeth determined to deſtroy him. On this Macduff fled to France; and Macbeth cruelly put to death his wife, and children who were yet infants, and ſequeſtered his eſtate. Macduff vowed re-
38 Macbeth driven out, venge, and encouraged Malcolm to attempt to dethrone the tyrant. Macbeth oppoſed them with his whole force; but being defeated in a pitched battle, he took refuge in the moſt inacceſſible places of the Highlands, where he defended himſelf for two years; but in the mean time Malcolm was acknowledged king of Scotland, and crowned at Scone.

39 And killed. The war between Macbeth and the new king continued for two years after the coronation of the latter; but at laſt he was killed in a ſally by Macduff. However the public diſturbances did not end with his life. His followers elected one of his kinſmen named *Lullach*, ſurnamed the *Idiot*, to ſucceed him: but he not being able to withſtand Malcolm, withdrew to the north, where being purſued, he was killed at Lifey in Strathbogie, after a reign of four months.

40 Malcolm eſtabliſhed on the Scottiſh throne. Malcolm being now eſtabliſhed on the throne, began with rewarding Macduff for his great ſervices; and conferred upon his family four extraordinary privileges.

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1. That they ſhould place the king in his chair of ſtate at the coronation. 2. That they ſhould lead the van of all the royal armies. 3. That they ſhould have a regality within themſelves: and, 4. That if any of Macduff's family ſhould happen to kill a nobleman unpremeditately, he ſhould pay 24 marks of ſilver, and, if a plebeian, 12. The king's next care was to reinſtate in their fathers poſſeſſions all the children who had been diſinherited by the late tyrant; which he did in a convention of his nobles held at Forfar. In the time of William the conqueror, we find Malcolm engaged in a dangerous war with England, the occaſion of which was as follows. On the death of Edward the Confeſſor, Harold ſeized the throne of England, to the prejudice of Edgar Atheling the true heir to the crown. However, he created him earl of Oxford, and treated him with great reſpect; but on the defeat and death of Harold, William diſcovered ſome jealouſy of Edgar. Soon after, William having occaſion to pay a viſit to his dominions in Normandy, he appointed Edgar to attend him, along with ſome other noblemen whom he ſuſpected to be in his intereſt; but on his return to England, he found the people ſo much diſaffected to his government, that he proceeded with great ſeverity, which obliged great numbers of his ſubjects to take refuge in Cumberland and the ſouthern parts of Malcolm's dominions. Edgar had two ſiſters, Margaret and Chriſtina: theſe, with his two chief friends, Goſpatric and Marteſwin, ſoon made him ſenſible how precarious his life was under ſuch a jealous tyrant, and perſuaded him to make preparations for flying into Hungary or ſome foreign country. Edgar accordingly ſet ſail with his mother Agatha, his two ſiſters, and a great train of Anglo Saxon noblemen; but by ſtreſs of weather was forced into the frith of Forth, where the illuſtrious exiles landed at the place ſince that time called the *Queen's Ferry*. Malcolm no ſooner heard of their landing than he paid them a viſit in perſon; and at this viſit he fell in love with the princeſs Margaret. In conſequence of this, the chief of Edgar's party repaired to the court of Scotland. William ſoon made a formal demand of Edgar; and on Malcolm's refuſal, declared war againſt him.

41 Entertains Edgar an Engliſh prince.

42 War between Scotland and England.

William was the moſt formidable enemy the Scots had ever encountered, as having not only the whole force of England, but of Normandy, at his command. However, as he had tyrannized moſt unmercifully over his Engliſh ſubjects, they were much more inclined to aſſiſt his enemies than their own prince; and he even found himſelf obliged to give up the county of Northumberland to Goſpatric, who had followed Edgar, upon condition of his making war on the Scots. This nobleman accordingly invaded Cumberland; in return for which Malcolm ravaged Northumberland in a dreadful manner, carrying off an immenſe booty, and inviting at the ſame time the Iriſh and Danes to join him.

Even at this time the Danes kept up their claims upon the crown of England, ſo that they could not be ſuppoſed very zealous for the intereſt of Edgar. The Iriſh were alſo intereſted in advancing the cauſe of Harold's three ſons, who had put themſelves under their protection; and beſides, their chief view ſeems to have been to obtain plunder at the expence of any party. However, as all theſe views tended to the pulling down of William's power, an union was formed againſt him; but when they came to particular ſtipulations, the parties immediately diſagreed. The three ſons of Harold, with a body of Iriſh, made a deſcent upon Somerſetſhire, and defeated a body of Engliſh; but the Iriſh having thus obtained an opportunity of acquiring ſome booty, immediately retired with it, after having ravaged the country. The Danes landed at the mouth of the Humber from 40 ſmall ſhips, where they were joined by Edgar and his party; and had the allies been unanimous, it is probable that William's government would have been overthrown.

Scotland.

43 England invaded.

By this time William had taken from Goſpatric the earldom of Northumberland, and given it to Robert Cummin one of his Norman barons; but the Northumbrians having joined Goſpatric, and received the Danes as their countrymen, murdered Cummin and all his followers at Durham, where they had been guilty of great cruelties. After this they laid ſiege to the forts built by William in Yorkſhire; but not being able to reduce them, the Engliſh Scots, and Danes, united their forces, took the city of York itſelf, and put to the ſword three thouſand Normans who were there in garriſon; and this ſucceſs was followed by many incurſions and ravages, in which the Danes and Northumbrians acquired great booty. It ſoon appeared, however, that theſe allies had the intereſt of Edgar no more at heart than the Iriſh; and that all the dependence of this forlorn prince was upon Malcolm, and the few Engliſhmen who had followed his fortune; for the booty was no ſooner obtained, than the Danes retired to their ſhips, and the Northumbrians to their habitations, as though they had been in perfect ſafety. But in the mean time William, having raiſed a conſiderable army, advanced northwards. He firſt took a ſevere revenge upon the Northumbrians; then he reduced the city of York, and put to death all the inhabitants; and perceiving that danger was ſtill threatened by the Danes, he bribed them with a ſum of money to depart to their own country.

Malcolm was now left alone to encounter this formidable adverſary; who, finding himſelf unable to oppoſe ſo great a force, withdrew to his own dominions, where he remained for ſome time on the defenſive, but not without making great preparations for invading England once more. His ſecond invaſion took place in the year 1071, while William was employed in quelling an inſurrection in Wales. He is ſaid at this time to have behaved with the greateſt cruelty. He invaded England by Cumberland; ravaged Teeſdale; and at a place called *Hundreds-keld*, he maſſacred ſome Engliſh noblemen, with all their followers. From thence he marched to Cleveland in the north-riding of Yorkſhire; which he alſo ravaged with the utmoſt cruelty, ſending back the booty with part of his army to Scotland: after which, he pillaged the biſhopric of Durham, where he is ſaid not to have ſpared the moſt ſacred edifices, but to have burnt them to the ground. In the mean time Goſpatric, to whom William had again ceded Northumberland, attempted to make a diverſion in his favour, by invading Cumberland: but being utterly defeated by Malcolm, he was obliged to ſhut himſelf up in Bamborough caſtle; while Malcolm returned in triumph with his army to Scotland, where he married the princeſs Margaret.

44 A ſecond invaſion.

The next year William, having greatly augmented his

Scotland.

45 William the Conqueror invades Scotland.

his army, invaded Scotland in his turn. The particulars of the war are unknown; but it certainly ended much to the diſadvantage of the Scots, as Malcolm agreed to pay him homage. The Engliſh hiſtorians contend that this homage was for the whole of his dominions; but the Scots with more ſhow of reaſon affirm, that it was only for thoſe he poſſeſſed in England. On the concluſion of the peace, a croſs was erected at Stanmore in Richmondſhire, with the arms of both kings, to ſerve as a boundary between the poſſeſſions of William and the feudal dominions of Malcolm. Part of this monument, called *Re-croſs*, or rather *Roy-croſs*, or *The croſs of the kings*, was entire in the days of Camden.

This peace between Malcolm Canmore and William produced the greateſt alteration in the manners of the Scots. What contributed chiefly to this was the excellent diſpoſition of queen Margaret; who was, for that age, a pattern of piety and politeneſs: and next to this was the number of foreigners who had ſettled in Scotland; among whom were ſome Frenchmen, who laid the foundation of that friendſhip with the Scots which laſted for ages. Malcolm himſelf, alſo, though by his ravages in England he ſeems naturally to have been a barbarian, was far from being averſe to a reformation, and even ſet the example himſelf. During her huſband's abſence in England queen Margaret had choſen for her confeſſor one Turgot, whom ſhe alſo made her aſſiſtant in her intended reformation. She began with new-modelling her own court; into which ſhe introduced the offices, furniture, and manner of living, common among the more polite nations of Europe. She diſmiſſed from her ſervice all thoſe who were noted for immorality and impiety: and charged Turgot, on pain of her diſpleaſure, to give his real ſentiments on the ſtate of the kingdom, after the beſt inquiry he could make. By him ſhe was informed, that faction reigned among the nobles, rapine among the commons, and incontinence among all degrees of men. Above all, he complained that the kingdom was deſtitute of a learned clergy, capable of reforming the people by their example and doctrine. All this the queen repreſented to her huſband, and prevailed upon him to ſet about the work of reformation immediately; in which, however, he met with conſiderable oppoſition. The Scots, accuſtomed to oppreſs their inferiors, thought all reſtrictions of their power were as many ſteps towards their ſlavery. The introduction of foreign offices and titles confirmed them in this opinion; and ſuch a dangerous inſurrection happened in Moray and ſome of the northern counties, that Malcolm was obliged to march againſt the rebels in perſon. He found them, indeed, very formidable; but they were ſo much intimidated by his reſolution, that they intreated the clergy who were among them to intercede with the king in their favour. Malcolm received their ſubmiſſion, but refuſed to grant an unconditional pardon. He gave all the common people indeed leave to return to their habitations, but obliged the better ſort to ſurrender themſelves to his pleaſure. Many of the moſt guilty were put to death, or condemned to perpetual impriſonment; while others had their eſtates confiſcated. This ſeverity checked the rebellious ſpirit of the Scots, upon which Malcolm returned to his plans of reformation. Still, however, he found himſelf oppoſed even in thoſe abuſes,

46 Reformation ſet on foot by the king and queen of Scotland.

which were moſt obvious and glaring. He durſt not entirely aboliſh that infamous practice of the landlord claiming the firſt night with his tenant's bride; though, by the queen's influence, the privilege was changed into the payment of a piece of money by the bridegroom, and was afterwards known by the name of *merchcta mulierum*, or "the woman's merk." In thoſe days the Scots were without the practice of ſaying grace after meals, till it was introduced by Margaret, who gave a glaſs of wine, or other liquor, to thoſe who remained at the royal table and heard the thankſgiving; which expedient gave riſe to the term of the *grace-drink*. Beſides this, the terms of the duration of Lent and Eaſter were fixed; the king and queen beſtowed large alms on the poor, and the latter waſhed the feet of ſix of their number; many churches, monaſteries, &c. were erected, and the clerical revenues augmented. However, notwithſtanding theſe reformations, ſome hiſtorians have complained, that, along with the manners of the Engliſh and French, their luxuries were alſo introduced. Till this reign the Scots had been remarkable for their ſobriety and the ſimplicity of their fare; which was now converted into excels and riot, and ſometimes ended fatally by quarrels and bloodſhed. We are told, at the ſame time, that even in thoſe days, the nobility eat only two meals a-day, and were ſerved with no more than two diſhes at each meal; but that their deviation from their ancient temperance occaſioned a diminution of the ſtrength and ſize of the people.

Scotland.

47 England again invaded

In the year 1077, Malcolm again invaded England; but upon what provocation, or with what ſucceſs, is not well known. But in 1088, after the death of the Conqueror, he again eſpouſed the cauſe of Edgar Atheling, who had been reduced to implore his aſſiſtance a ſecond time, when William Rufus aſcended the throne of England. At the time of Edgar's arrival, Malcolm was at the head of a brave and well-diſciplined army, with which he penetrated a great way into the country of the enemy; and, as it is ſaid, returned to Scotland with an immenſe booty. Some hiſtorians tell us, that in this expedition Malcolm met with a defeat, which obliged him to return; and indeed this is not a little countenanced by others, who ſay, not indeed that he was defeated, but that it was *the will of God* he ſhould proceed no farther. But, be this as it will, William reſolved to revenge the injury, and prepared great armaments both by ſea and land for the invaſion of Scotland. His ſucceſs, however, was not anſwerable to the greatneſs of his preparations. His fleet was driven to pieces by ſtorms, and almoſt all on board of it periſhed. Malcolm had alſo laid waſte the country through which his antagoniſt was to paſs, in ſuch an effectual manner, that William loſt a great part of his troops by fatigue and famine; and, when he arrived in Scotland, found himſelf in a ſituation very little able to reſiſt Malcolm, who was advancing againſt him with a powerful army. In this diſtreſs, Rufus had recourſe to Robert de Mowbray earl of Northumberland, who diſſuaded him from venturing a battle, but adviſed him by all means to open a negociation by means of Edgar and the other Engliſh noblemen who reſided with Malcolm. Edgar undertook the negociation, on condition of his being reſtored to his eſtates in England; but met with more difficulty than he imagined. Malcolm had never yet recognized the right of William Rufus to the throne of

48 The Engliſh army in great danger.

Scotland. of England, and therefore refuſed to treat with him as a ſovereign prince; but offered to enter into a negociation with his brother Robert, ſurnamed *Curt hoſe*, from the ſhortneſs of his legs. The two princes accordingly met; and Malcolm, having ſhown Robert the diſpoſition of his army, offered to cut off his brother William, and to pay to him the homage he had been accuſtomed to pay the Conqueror for his Engliſh dominions. But Robert generouſly anſwered, that he had reſigned to Ruſus his right of primogeniture in England; and that he had even become one of William's ſubjects, thereby accepting of an Engliſh eſtate.

49 Peace concluded. An interview with William then followed; in which it was agreed that the king of England ſhould reſtore to Malcolm all his ſouthern poſſeſſions, for which he ſhould pay the ſame homage he had been accuſtomed to do to the Conqueror, that he ſhould reſtore to Malcolm 12 diſputed manors, and give him likewiſe 12 merks of gold yearly, beſides reſtoring Edgar to all his Engliſh eſtates.

This treaty was concluded in Lothian, according to the Engliſh hiſtorians; but at Leeds in Yorkſhire, according to the Scots. However, the Engliſh monarch looked upon the terms to be ſo very diſhonourable, that he reſolved not to fulfil them. Soon after his departure Edgar and Robert began to preſs him to fulfil his engagements; but receiving only evaſive anſwers, they paſſed over into Normandy. After their departure, William applied himſelf to the fortification of his northern boundaries, eſpecially Carliſle, which had been deſtroyed by the Danes 200 years before.—As this place lay within the feodal dominions of Malcolm, he complained of William's proceeding, as a breach of the late treaty; and ſoon after repaired to the Engliſh court at Glouceſter, that he might have a perſonal interview with the king of England, and obtain redreſs.

50 Hoſtilities recommenced. On his arrival, William refuſed him admittance to his preſence, without paying him homage. Malcolm offered this in the ſame manner as had been done by his predeceſſors, that is, on the confines of the two kingdoms; but this being rejected by William, Malcolm returned to Scotland in a rage, and prepared again for war.

51 Malcolm killed at the ſiege of Alnwick caſtle. The firſt of Malcolm's military operations now proved fatal to him; but the circumſtances of his death are variouſly related. According to the Scots hiſtorians, Malcolm having laid ſiege to Alnwick, and reduced the place to ſuch ſtraits, that a knight came out of the caſtle, having the keys on the point of a ſpear, and pretending that he deſigned to lay them at Malcolm's feet; but inſtead of this, he ran him through the eye with the ſpear, as ſoon as he came within reach. They add, that prince Edward, the king's eldeſt ſon, was mortally wounded in attempting to revenge his father's death. The Engliſh hiſtorians, on the other hand, contend, that the Scots were ſurpriſed in their camp, their army entirely defeated, and their king killed. On this occaſion the Scots hiſtorians alſo inform us, that the family of Piercy received its name; the knight who killed the Scots king having been ſurnamed *Pierce-eye*, from the manner in which he gave that monarch the fatal ſtroke. Queen Margaret, who was at that time lying ill in the caſtle of Edinburgh, died four days after her huſband.

After the death of Malcolm Canmore, which happened in the year 1093, the throne was uſurped by his brother Donald Bane; who, notwithſtanding the great virtues and glorious atchievements of the late king, had been at the head of a ſtrong party during the whole of his brother's reign. The uſurper, giving way to the barbarous prejudices of himſelf and his countrymen, expelled out of the kingdom all the foreigners whom Malcolm had introduced, and obliged them to take refuge in England. Edgar himſelf had long reſided at the Engliſh court, where he was in high reputation; and, by his intereſt there, found means to reſcue his nephew young Edgar, the king of Scotland's eldeſt ſon, out of the hands of the uſurper Donald Bane. The favour he ſhowed to him, however, produced an accuſation againſt himſelf, as if he deſigned to adopt young Edgar as his ſon, and ſet him up as a pretender to the Engliſh throne. This accuſation was preferred by an Engliſhman whoſe name was *Orgar*; but, as no legal proofs of the guilt could be obtained, the cuſtom of the times rendered a ſingle combat between the parties unavoidable. Orgar was one of the ſtrongeſt and moſt active men in the kingdom; but the age and infirmities of Edgar allowed him to be defended by another. For a long time none could be found who would enter the liſts with this champion; but at laſt one Godwin of Wincheſter, whoſe family had been under obligations to Edgar or his anceſtors, offered to defend his cauſe. Orgar was overcome and killed: and, when dying, confeſſed the falſehood of his accuſation. The conqueror obtained all the lands of his adverſary, and William lived ever afterwards on terms of the ſtricteſt friendſhip with Edgar.

Scotland. 52 The throne uſurped by Donald Bane.

53 A ſingle combat.

This combat, trifling as it may ſeem to us, produced very conſiderable effects. The party of Edgar and his brother's (who had likewiſe taken refuge at the Engliſh court) revived in Scotland, to ſuch a degree, that Donald was obliged to call in the Danes and Norwegians to his aſſiſtance. In order to engage them more effectually to his intereſt, the uſurper yielded up to them the Orkney and Shetland iſlands; but when his new allies came to his aſſiſtance, they behaved in ſuch a manner as to become more intolerable to the Scots than ever the Engliſh had been. This diſcontent was greatly increaſed when it was found that William deſigned to place on the throne of Scotland a natural ſon of the late Malcolm, named *Duncan*, who had ſerved in the Engliſh armies with great reputation. Donald attempted to maintain himſelf upon the throne by the aſſiſtance of his Norwegian allies; but, being abandoned by the Scots, he was obliged to fly to the iſles, in order to raiſe more forces; and in the mean time Duncan was crowned at Scone with the uſual ſolemnity.

54 Donald yields up the Orkney and Shetland iſlands to the Danes.

The Scots were now greatly diſtreſſed by two uſurpers who contended for the kingdom, each of them ſupported by a foreign army. One of them, however, was ſoon diſpatched. Malpedir, thane of Mearns, ſurpriſed Duncan in the caſtle of Mentieth, and killed him; after which he replaced Donald on the throne. The affection of the Scots, however, was by this time entirely alienated from Donald, and a manifeſt intention of calling in young Edgar was ſhown. To prevent this, Donald offered the young prince all that part of Scotland which lay to the ſouthward of the Forth; but the terms were rejected, and the meſſengers who brought

Scotland. brought them were put to death as traitors. The king of England alſo, dreading the neighbourhood of the Norwegian, interpoſed in young Edgar's favour, and gave Atheling the command of an army in order to reſtore his nephew. Donald prepared to oppoſe his enemies with all the forces he could raiſe; but was deſerted by the Scots, and obliged to flee: his enemies purſued him ſo cloſely, that he was ſoon taken; and being brought before Edgar, he ordered his eyes to be put out, condemning him at the ſame time to perpetual baniſhment, in which he died ſome time after.

55 Donald depoſed by Edgar.

The hiſtorians of theſe times inform us, that this revolution was owing to the interpoſition of St Cuthbert, who appeared to Edgar, informing him that he ſhould prove victorious, provided he repaired next day to his church, and received his banner from the hands of the canons; which he accordingly did, and proved ever afterwards a moſt grateful votary to his patron. During his reign a ſtrict friendſhip ſubſiſted between the courts of England and Scotland; owing to the marriage of Henry I. of England with the Princeſs Matilda, ſiſter to Edgar. This has given occaſion to the Engliſh hiſtorians to aſſert that Edgar held the kingdom of Scotland as a feudatory of Henry; and to this purpoſe have forged certain writings, by which Edgar acknowledges "That he held the kingdom of Scotland by gift from his Lord William king of England; and with conſent of his ſaid lord, he gives to Almighty God, and the church of Durham, and to the glorious biſhop of St Cuthbert, and to biſhop William, and to the monks of Durham, and their ſucceſſors, the manſions of Berwick and Coldingham, with ſeveral other lands poſſeſſed by his father Malcolm: and this charter is granted in the preſence of biſhop William, and Turgot the prior; and confirmed by the croſſes of Edgar his brother, and other noblemen." But that theſe writings are forged, appears from the non-exiſtence of the original charter, and from their being related in quite a different manner by ſome other authors.—For the ſame purpoſe a ſeal has been forged of Edgar ſitting on horſeback, with a ſword in his right-hand, and a ſhield on his left arm, within a border of France. But this laſt circumſtance is a ſufficient proof of the forgery; ſince, in the ſame repoſitory in which this ſeal is kept, there are five charters of the ſame Edgar which are undoubtedly genuine; and on the ſeals belonging to them he is repreſented ſitting on two ſwords placed acroſs, with a ſceptre in one hand, a ſword in the other, a royal diadem on his head, with this inſcription round it, SCOTORUM BASILEUS, which the beſt Engliſh antiquaries allow to have been a title denoting independency.

56 Forgeries of the Engliſh hiſtorians.

After a reign of nine years, Edgar died at Dundee, in the year 1107, and was ſucceeded by his brother Alexander I. ſurnamed the *Fierce* from the impetuoſity of his temper. On his acceſſion to the throne, however, the Scots were ſo ignorant of his true character, on account of his appearance of piety and devotion, that the northern parts of the kingdom were ſoon filled with ravages and bloodſhed, by reaſon of the wars of the chieftains with each other. Alexander immediately raiſed an army, and marching into Moray and Roſs-ſhire, attacked the inſurgents ſeparately; and having ſubdued them all, he put great numbers of them to death. He then ſet himſelf to reduce the exorbitant power of the nobles, and to deliver the common people from the oppreſſion under which they groaned. A remarkable inſtance of this appeared on his return from the expedition juſt now mentioned. In paſſing through the Mearns, he met with a widow, who complained that her huſband and ſon had been put to death by the young earl their ſuperior. Alexander immediately alighted from his horſe, and ſwore that he would not remount till he had inquired into the juſtice of the complaint; and, finding it to be true, the offender was hanged on the ſpot. Theſe vigorous proceedings prevented all attempts at open rebellion; but produced many conſpiracies among the profligate part of his private ſubjects, who had been accuſtomed to live under a more remiſs government. The moſt remarkable of theſe took place while the king was engaged in building the caſtle of Biledgar, ſo called in memory of his brother Edgar, who had laid the foundation-ſtone. It was ſituated in the Carſe of Gowrie, which, we are told, had formerly belonged to Donald Bane, but afterwards came to the crown, either by donation or forfeiture. The conſpirators bribed one of the king's chamberlains to introduce them at night into the royal bed-chamber: but Alexander, alarmed at the noiſe, drew his ſword, and killed ſix of them; after which, by the help of a knight named *Alexander Carron*, he eſcaped the danger, by fleeing into Fife. The conſpirators chiefly resided in the Mearns, to which Alexander once more repaired at the head of an army; but the rebels retreated northwards, and croſſed the Spey. The king purſued them acroſs that river, defeated them, and brought to juſtice all that fell into his hands. In this battle, Carron diſtinguiſhed himſelf ſo eminently, that he obtained the name of *Sk ingeour* or *Skrimzeour*; which indeed is no other than the Engliſh word *ſkirmiſher* or *fighter*.

59 Narrowly eſcapes aſſaſſination.

60 His expedition in England.

The next remarkable tranſaction of Alexander's reign, as recorded by the Engliſh hiſtorians, was his journey into England, where he paid a viſit to Henry I. whom he found engaged in a war with the Welch. The occaſion of it was this: Henry had planted a colony of Flemings on the borders of Wales, in order to keep that turbulent people in awe, as well as to introduce into his kingdom the manufactures for which the Flemings were famous. The Welch, jealous of this growing colony, invaded England; where they defeated the earl of Cheſter and Gilbert Strongbow, the two moſt powerful of the Engliſh ſubjects. Alexander, in virtue of the fealty which he had ſworn for his Engliſh poſſeſſions, readily agreed to lead an army into Wales. There he defeated one of the chieftains, and reduced him to great ſtraits; but could not prevent him from eſcaping to Griffith prince of North Wales, with whom he was cloſely allied. Henry alſo marched againſt the enemy, but with much worſe ſucceſs in the field than Alexander; for he loſt two-thirds of his army, with almoſt his whole baggage, by fatigue, famine, and the attacks of the Welſh. This loſs, however, he made up in ſome meaſure by his policy; for having found means to raiſe a jealouſy between the two Welch chiefs, he induced them to conclude a peace, but not without reſtoring all his lands to the one, and paying a conſiderable ſum of money to the other. Alexander died in 1124, after a reign of ſeventeen years; and was buried at Dunfermline.

61 War of his brother David with the Engliſh.

This prince, being a bachelor, was ſucceeded by his younger brother David; who inherited in the ſame

57 Alexander I.

58 Adminiſters juſtice rigidly.

Scotland.

of England, and took part with the empress Maud in the civil war the carried on with Stephen. In 1136, David met his antagonist at Durham; but as neither party cared to venture an engagement, a negociation took place, and a treaty was concluded. This, however, was observed but for a short time; for, in the following year, David again invaded England, on some frivolous pretences. He defeated Stephen at Roxburgh; and forced him to retreat precipitately, after losing one half of his army. Next year he renewed his invasion; and, though he himself was a man of great mildness and humanity, he suffered his troops to commit such outrages, as firmly united the English in opposition to him. His grand-nephew William cut in pieces the vanguard of the English army at Clitheroe; after which he ravaged the country with such cruelty, that the inhabitants became exasperated beyond measure against him. New associations were entered into against the Scots; and the English army receiving great reinforcements from the southward, advanced to Northallerton, where the famous standard was produced. The body of this standard was a kind of box which moved upon wheels, from which arose the mast of a ship surmounted by a silver cross, and round it were hung the banners of St Peter, St John de Beverly, and St Wilfred. Standards of this kind were common at that time on the continent of Europe; and so great confidence had the English in this standard, that they now thought themselves invincible. They had, however, a much more solid ground of confidence, as being much better armed than their antagonists. The armies met at a place called *Culton Moor*. The first line of the Scots army was composed of the inhabitants of Galloway, Carric, Kyle, Cunningham, and Renfrew. These by some historians are called *Picts*, and are said to have had a prince of their own, who was a feudatory to David. The second line consisted of the Lothian men, by which we are to understand the king's subjects in England as well as the south of Scotland, together with the English and Normans of Maud's party. The third line was formed of the clans under their different chieftains; but who were subject to no regular command, and were always impatient to return to their own country when they had acquired any booty. The English soldiers having ranged themselves round their standard, dismounted from their horses, in order to avoid the long lances which the first line of the Scots army carried. Their front-line was intermixed with archers; and a body of cavalry, ready for pursuit, hovered at some distance. The Picts, besides their lances, made use of targets; but, when the English closed with them, they were soon disordered and driven back upon the centre, where David commanded in person. His son made a gallant resistance, but was at last forced to yield: the last line seems never to have been engaged. David, seeing the victory decided against him, ordered some of his men to save themselves by throwing away their badges, which it seems Maud's party had worn, and mingling with the English; after which he himself, with his shattered forces, retreated towards Carlisle. The English historians say, that in this battle the Scots were totally defeated, with the loss of 10,000 men; but this seems not to be the case, as the English did not pursue, and the Scots were in a condition for carrying on the war next year. However, there were now no great exploits performed on either side; and a peace was concluded, by which Henry prince of Scotland was put in possession of Huntingdon and Northumberland, and took an oath of fealty to Stephen. David continued faithful to his niece the empress as long as he lived; and died at Carlisle in the year 1153, after a glorious reign of somewhat more than 29 years.

62 Battle of the Standard.

63 The Scots entirely defeated.

David was succeeded by his grandson Malcolm IV. surnamed the *Maiden*, on account of his continence. He appears to have been a weak and superstitious prince, and died of a depression of spirits in the year 1165. He was succeeded by his brother William I. who immediately entered into a war with Henry II. of England, on account of the earldom of Northumberland, which had been given up by Malcolm; but Henry, finding his affairs in a very embarrassed situation, consented to yield up this county, on William's paying him homage, rather than continue the miseries of war. In 1172, he attempted to avail himself of the unnatural war which Henry's sons carried on against their father, and invaded England. He divided his army into three columns: the first of which laid siege to Carlisle; the second he himself led into Northumberland; and the king's brother, David, advanced with the third into Leicestershire. William reduced the castles of Burgh, Appleby, Warkworth, and Garby; and then joined that division of his army which was besieging Carlisle. The place was already reduced to such straits, that the governor had agreed to surrender it by a certain day, provided it was not relieved before that time: on which the king, leaving some troops to continue the siege, invested a castle with some of the forces he had under his command, at the same time sending a strong reinforcement to his brother David; by which means he himself was left with a very small army, when he received intelligence that a strong body of English under Robert de Stuteville and his son were advancing to surprise him.—William, sensible of his inability to resist them, retired to Alnwick, to which he instantly laid siege; but in the mean time acted in such a careless and unthinking manner, that his enemies actually effected their designs. Having dressed a party of their soldiers in Scots habits, they took the king himself prisoner, and carried him, with his feet tied under the belly of a horse, to Richmond Castle. He was then carried in chains before Henry to Northampton, and ordered to be transported to the castle of Falaise in Normandy, where he was shut up with other state prisoners. Soon after this an accommodation took place between Henry and his sons, and the prisoners on both sides were set at liberty, William only excepted, who bore his confinement with great impatience. Of this Henry took the advantage, to make him pay homage for the whole kingdom of Scotland, and acknowledge that he held it only as a feu of the crown of England; and, as a security, he was obliged to deliver into the hands of Henry all the principal forts in Scotland, *viz.* the castles of Roxburgh, Berwick, Jedburgh, Edinburgh, and Stirling; William at the same time agreeing to pay the English garrisons which were put into these castles. David, the king's brother, with 20 barons, who were present at the signing of this shameful convention, were put into the hands of Henry as hostages for William's good faith; after which the king was set at liberty, and returned to Scotland.

64 William I. engages in a war with Henry II. of England.

65 He is taken prisoner by the English and obliged to do homage for his kingdom.

Scotland.

The affairs of Scotland were now in the greateſt confuſion. The people of Galloway, at the head of whom were two noblemen or princes called *Othred* and *Gilbert*, had taken the opportunity of aſſerting their independency on the crown of Scotland; and, having expelled all the Scots officers out of the country, they demoliſhed all the forts which William had erected in their country, and put to death all the foreigners. But in the mean time a quarrel enſuing between the two chiefs, Othred was murdered by Gilbert, who immediately applied to Henry for protection.

Henry, in order to give all poſſible ſanction to the convention betwixt him and William, ſummoned him to meet him and his ſon at York. William obeyed the ſummons, and along with him appeared all the great nobility and biſhops; who confirmed the convention of Falaiſe, ſwore fealty to Henry, and put themſelves and their country under his protection. In the mean time, Gilbert, who was at the head of the rebels in Galloway, had offered to put himſelf and his people under the protection of the king of England, and to pay to Henry 2000 merks of ſilver yearly, with 500 cows and as many hogs, by way of tribute: however, Henry, that he might oblige his new feudatory William, refuſed to have any concern in the affair. On this, William ordered his general Gilchriſt to march againſt him; which he did with ſuch ſucceſs, that Gilbert was entirely defeated, and Galloway again reduced under the dominion of Scotland. Very ſoon after this victory, Gilchriſt fell under the king's diſpleaſure on the following occaſion. He had married Matilda, ſiſter to William; and on ſuſpicion, or proof, of her incontinence, put her to death at a village called *Mayne*, near Dundee. The king being highly diſpleaſed at ſuch a groſs affront to himſelf, ſummoned Gilchriſt to take his trial for the murder: but as the general did not chooſe to make his appearance, his eſtates were confiſcated, his caſtles demoliſhed, and he himſelf baniſhed. He took refuge in England; but as it had been agreed in the convention between William and Henry that the one ſhould not harbour the traiterous ſubjects of the other, Gilchriſt was forced to return to Scotland with his two ſons. There they were expoſed to all the miſeries of indigence, and in perpetual fear of being diſcovered, ſo that they were obliged to ſkulk from place to place. William, on his return from an expedition againſt an uſurper whom he had defeated, happened to obſerve three ſtrangers, who, though diſguiſed like ruſtics, appeared by their noble mien to be above the vulgar rank. William, who firſt diſcovered them, was confirmed in this apprehenſion, by ſeeing them ſtrive out of the high road, and endeavour to avoid notice. He ordered them to be ſeized and brought before him. The oldeſt, who was Gilchriſt himſelf, fell upon his knees before him, and gave ſuch a detail of his miſfortunes as drew tears from the eyes of all preſent; and the king reſtored him to his former honours and eſtates. From the family of this Gilchriſt that of the Ogilvies is ſaid to be deſcended.

66 Adventures of William's general, Gilchriſt.

67 Origin of the family of Ogilvy.

The Scots continued to be in ſubjection to the Engliſh until the acceſſion of Richard I. This monarch being a man of romantic valour, zealouſly undertook an expedition into the Holy Land againſt the Turks, according to the ſuperſtition of the times. That he might ſecure the quiet of his dominions, however, he determined to make the king of Scotland his friend; and for this purpoſe, he thought nothing could be more acceptable than releaſing him and his ſubjects from that ſubjection which even the Engliſh themſelves conſidered as forced and unjuſt. However, he determined not to loſe this opportunity of supplying himſelf with a ſum of money, which could not but be abſolutely neceſſary in ſuch an expenſive and dangerous undertaking. He therefore made William pay him 10,000 merks for this releaſe: after which he entered into a convention, which is ſtill extant; and in this he acknowledges, that "all the conventions and acts of ſubmiſſion from William to the crown of England had been extorted from him by unprecedented writings and dureſſe." This tranſaction happened in the year 1189.

Scotland.

68 William releaſed from his homage by Richard I.

The generoſity of Richard met with a grateful return from William; for when Richard was impriſoned by the emperor of Germany in his return from the Holy Land, the king of Scotland ſent an army to aſſiſt his regency againſt his rebellious brother John, who had wickedly uſurped the throne of England. For this Richard owned his obligation in the higheſt degree; but William afterwards made this an handle for ſuch high demands as could not be complied with. Nevertheleſs, the two monarchs continued in friendſhip as long as Richard lived. Some differences happened with king John about the poſſeſſion of Northumberland and other northern counties: but theſe were all finally adjuſted to the mutual ſatisfaction of both parties; and William continued a faithful ally of the Engliſh monarch till his death, which happened in the year 1214, after a reign of 49 years.

69 Alexander II.

William was ſucceeded by his ſon Alexander II. a youth of 16. He revived his claim to Northumberland and the other northern counties of England; but John, ſuppoſing that he had now thoroughly ſubdued the Engliſh, not only refuſed to conſider the demands of Alexander, but made preparations for invading Scotland. John had given all the country between Scotland and the river Tees to Hugh de Baliol and another nobleman, upon condition of their defending it againſt the Scots. Alexander fell upon Northumberland, which he eaſily reduced, while John invaded Scotland. Alexander retired to Melros, in order to defend his own country; upon which John burnt the towns of Wark, Alnwick, and Morpeth, and took the ſtrong caſtles of Roxburgh and Berwick. He next plundered the abbey of Coldingham, reduced Dunbar and Haddington, ravaging the country as he paſſed along. His next operation was directed againſt Edinburgh; but being oppoſed by Alexander at the head of an army, he precipitately marched back. Alexander did not dare to purſue; and John, to cover his retreat, burnt the towns of Berwick and Coldingham. In this retreat the king of England himſelf ſet his men an example of barbarity, by ſetting fire every morning to the houſe in which he had lodged the preceding night. In ſhort, ſuch deſolation did John ſpread around him, that Alexander found it impoſſible to continue his purſuit; for which reaſon he marched weſtward, and invaded England by the way of Carliſle. This place he took and fortified; after which he marched ſouth as far as Richmond, receiving homage from all the great barons as he went along.

70 War with John king of England.

Scotland. along. At Richmond he was again ſtopped by John's ravages, and obliged to return through Weſtmoreland to his own dominions.

When the Engliſh barons found it neceſſary to put themſelves under the protection of Louis, ſon to the king of France, that prince, among other acts of ſovereignty, ſummoned Alexander to do him homage; but the latter being then engaged in the ſiege of Carliſle, which had fallen into the hands of king John, he could not immediately attend. In a ſhort time Alexander found himſelf obliged to abandon this enterpriſe: after which he laid ſiege to Barnard-caſtle; but being baffled here alſo, marched ſouthwards through the whole kingdom of England, and met Louis at London or Dover, where the prince confirmed to him the rights to Northumberland, Cumberland, and Weſtmoreland. He continued a faithful ally to Louis and the barons in their wars with John; and, in 1216, brought a freſh army to their aſſiſtance, when their affairs were almoſt deſperate. This once more turned the ſcale againſt John; but he ſoon after dying, the Engliſh eaſily became reconciled to the government of Henry III. and the party of Louis dwindled every day, till at laſt he was obliged to drop all thoughts of being king of England.

As long as Louis continued in England, Alexander proved faithful to his intereſt; but, in 1217, he was on ſuch good terms with Henry as to demand his eldeſt ſiſter, the princeſs Joan, for a wife. His requeſt was granted, and in 1221 he eſpouſed the princeſs; while his eldeſt ſiſter Margery was married to Hubert de Burgh juſticiary of England, and his ſecond ſiſter to Gilbert earl Marſhal, the two greateſt ſubjects in England.

As long as the queen of Scotland lived, a perfect harmony ſubſiſted between the Scots and Engliſh: but in 1239 queen Joan died without children; and Alexander ſoon after married Mary, the daughter of Egelrand de Coucy, a young and beautiful French lady, by whom he had a ſon named *Alexander*, in 1241. From this time a coolneſs took place between the two courts, and many differences aroſe; but no hoſtilities were commenced on either ſide during the lifetime of Alexander, who died in 1249 in the 35th year of his reign.

71 Alexander III. Immediately after the death of his father, Alexander III. took poſſeſſion of the throne. He is the firſt of the Scots kings of whoſe coronation we have any particular account. We are told, that the ceremony was performed by the biſhop of St Andrew's, who girded the king with a military belt, probably as an emblem of his temporal juriſdiction. He then explained in Latin, and afterwards in Gaelic, the laws and oaths relating to the king; who agreed to and received them all with great appearance of joy, as he alſo did the benediction and ceremony of coronation from the ſame prelate. After the ceremony was performed, a Highlander, probably one of thoſe who went under the denomination of *Sannachies*, repeated on his knees before the throne, in his own language, the genealogy of Alexander and his anceſtors, up to the firſt king of Scotland.

72 Marries the daughter of Henry III. of England. In 1250, the king, though no more than ten years of age, was married to the daughter of Henry, who now thought it a proper opportunity to cauſe him to do homage for the whole kingdom of Scotland. But Alexander, notwithſtanding his youth, replied with great ſenſe and modeſty, that his buſineſs in England was matrimony; that he had come thither under Henry's protection and invitation; and that he was no way prepared to anſwer ſuch a difficult queſtion. Scotland.

Henry ſeems to have been encouraged to make this attempt by the diſtracted ſtate of the Scots affairs at that time; for, during the minority of the king, the nobility threw every thing into confuſion by their diſſenſions with one another. The family of Cummin were now become exceedingly powerful; and Alexander II. is blamed by Buchanan for allowing them to obtain ſuch an exorbitant degree of power, by which they were enabled almoſt to ſhake the foundation of government. Notwithſtanding the king's refuſal to ſubmit to the homage required of him, they imagined that Henry's influence was now too great; and fearing bad conſequences to themſelves, they withdrew from York, leaving Henry in full poſſeſſion of his ſon-in-law's perſon. Henry, however, to ſhow that he deſerved all the confidence which could be repoſed in him, publicly declared, that he dropped all claim of ſuperiority with regard to the crown of Scotland, and that he would ever afterwards act as the father and guardian of his ſon-in-law; confirming his aſſurances by a charter. Yet when Alexander returned to Scotland, he found they had made a ſtrong party againſt his Engliſh connections. They now exclaimed, that Scotland was no better than a province of England; and having gained almoſt all the nobility over to this opinion, they kept the king and queen as two ſtate-priſoners in the caſtle of Edinburgh. Henry had ſecret intelligence of theſe proceedings; and his queen privately ſent a phyſician whom ſhe could truſt, to inquire into her daughter's ſituation. Having found means of being admitted into the young queen's preſence, he gave him a moſt lamentable account of her ſituation. She ſaid, that the place of their confinement was very unwholeſome, in conſequence of which their health was in imminent danger; and that they had no concern in the affairs of government. Hiſtorians do not inform us by what means they were reduced to this diſmal ſituation; only in general, that the Cummins uſurped the whole power of the ſtate. Henry did not well know how to act. If he proceeded at once to violent meaſures, he was afraid of the lives of his daughter and ſon in-law; and, on the other hand, by a more cautious conduct, he left them expoſed to the wicked attempts of thoſe who kept them in thraldom, ſome of whom, he very well knew, had deſigns on the crown itſelf. By advice of the Scots royaliſts, among whom were the earls of Dunbar, Fife, Strathearne, Carric, and Robert de Bruce, Henry aſſembled his military tenants at York, from whence he himſelf advanced to Newcaſtle, where he publiſhed a manifeſto, diſclaiming all deſigns againſt the peace or independency of Scotland; declaring, that the forces which had been collected at York were deſigned to maintain both; and that all he meant was to have an interview with the king and queen upon the borders. From Newcaſtle he proceeded to Wark, where he privately diſpatched the earl of Gloceſter, with his favourite John Manſel, and a train of truſty followers, to gain admiſſion into the caſtle of Edinburgh, which was then held by John Baliol and Robert de Roſs, noblemen of great influence both in England and Scotland. The Earl and Manſel gained

73 Is confined with his queen by his rebellious ſubjects

74 They are ſet at liberty by Henry.

Scotland. gained admittance into the caſtle in diſguiſe, on pretence of their being tenants to Baliol and Reſs; and their followers obtained acceſs on the ſame account, without any ſuſpicion, till they were ſufficiently numerous to have maſtered the garriſon, had they met with any reſiſtance. The queen immediately informed them of the thraldom and tyranny in which ſhe had been kept; and among other things declared, that ſhe was ſtill a virgin, as her jailors obliged her to keep ſeparate from her huſband. The Engliſh, being maſters of the caſtle, ordered a bed to be prepared that very night for the king and queen; and Henry, hearing of the ſucceſs of his party, ſent a ſafe-conduct for the royal pair to meet him at Alnwick. Robert de Reſs was ſummoned by Henry to anſwer for his conduct; but throwing himſelf at the king's feet, he was puniſhed only by the ſequeſtration of his eſtate, as was John Baliol by a heavy fine, which the king of England reſerved entirely to his own uſe.

Alexander and his queen were attended to Alnwick by the heads of their party; and when they arrived, it was agreed that Henry ſhould act as his ſon-in-law's guardian; in conſequence of which, ſeveral regulations were made in order to ſuppreſs the exorbitant power of the Cummins. That ambitious family, however, were all this time privately ſtrengthening their party in Scotland, though they outwardly appeared ſatisfied with the arrangements which had been made. This rendered Alexander ſecure; ſo that, being off his guard, he was ſurpriſed when aſleep in the caſtle of Kinroſs by the earl of Menteith, who carried him to Stirling. The Cummins were joined in this treaſon by Sir Hugh de Abernethy, Sir David Lochore, and Sir Hugh de Barclay; and, in the mean time, the whole nation was thrown into the utmoſt confuſion. The great ſeal was forcibly taken from Robert Sutterville, ſubſtitute to the chancellor the biſhop of Durkeid; the eſtates of the royaliſts were plundered; and even the churches were not ſpared. The king at laſt was delivered by the death of the earl of Menteith, who is ſaid to have been poiſoned by his wife, in order to gratify her paſſion for a young Engliſh gentleman named *John Kyd*. This charge, however, was never proved; but it is certain that the earl died at a juncture very critical for Scotland, and that his death diſconcerted all the ſchemes of his party, which never afterwards could make head againſt the royaliſts.

25 Alexander carried off by rebels, but relieved.

Alexander being thus reſtored to the exerciſe of regal authority, acted with great wiſdom and moderation. He pardoned the Cummins and their adherents, upon their ſubmitting to his authority; after which, he applied himſelf to the regulation of his other affairs: but a ſtorm was now ready to break upon him from another quarter. We have already ſeen, that the uſurper Donald Bane, brother to Malcolm Canmore, had engaged to deliver up the iſles of Orkney and Shetland to the king of Norway, for aſſiſting him in making good his pretenſions to the crown of Scotland. Haquin, the king of Norway, at this time alleged, that theſe engagements extended to the delivering up the iſlands of Bute, Arran, and others in the Firth of Clyde, as belonging to the Ebudæ or Weſtern iſles; and as Alexander did not think proper to comply with theſe demands, the Norwegian monarch equipped with a fleet of 160 ſail, having on board [illegible] men, and ſailed round the iſle of Man, who landed and took the caſtle of Air. Alexander immediately diſpatched ambaſſadors to enter into a treaty with Haquin; but the latter, flaſhed with ſucceſs, would hearken to no terms. He made himſelf maſter of the iſles of Bute and Arran; after which he paſſed over to Cunninghame. Alexander, prepared to oppoſe him, divided his army into three bodies. The firſt was commanded by Alexander high ſteward of Scotland (the great grandfather of Robert II.) and conſiſted of the Argyle, Athol, Lenox, and Gallowa[illegible]. The ſecond was compoſed of the inhabitants of Lothian, Fife, Merne, Berwick, and Stirling, under the command of Patrick earl of Dunbar. The king himſelf led the centre, which conſiſted of the inhabitants of Perthſhire, Angus, Mearns, and the northern counties. Haquin, who was an excellent commander, [illegible] his men in order of battle, and the engagement began at a place called *Largs*. Both parties fought with great reſolution; but at laſt the Norwegians were defeated with dreadful ſlaughter, no fewer than 16,000 of them being killed on the ſpot. The remainder eſcaped to their ſhips; which were ſo completely wrecked the day after, that Haquin could procure but a veſſel to carry him with a few friends to Orkney, where he ſoon after died of grief.

In conſequence of this victory, Owen or John king of the iſland of Man ſubmitted to Alexander; and his example was followed by ſeveral other princes of the iſlands belonging to the Norwegians. Haquin's ſon, Magnus, a wiſe and learned prince, ſoon after arrived in Scotland with freſh reinforcements, and propoſed a treaty: but Alexander, inſtead of liſtening to an accommodation, ſent the earls of Buchan and Murray, with Allen the chamberlain, and a conſiderable body of men, to the weſtern iſlands, where they put to the ſword ſome of the inhabitants, and hanged their chiefs for having encouraged the Norwegian invaders. In the mean time, Magnus returned to Norway; where a treaty was at laſt concluded between him and Alexander. By this Magnus renounced all right to the controverted iſlands; Alexander at the ſame time conſenting to pay him [illegible] marks in the ſpace of four years, and two years after, to [illegible] whenever required. To cement the friendſhip more firmly, a marriage was concluded between Margaret the daughter of Alexander, and Eric the ſon and heir of Magnus, who was alſo crowned; and, ſome years after, when the parties were of proper age, the marriage was conſummated.

From the time of the acceſſion of Edward I. to the throne of England, we find nothing remarkable in the hiſtory of Scotland. That period, however, proved more [illegible] enemy to that country than it had ever experienced. Alexander was preſent at the coronation of Edward, who was then abſent from the Holy Land, where he had been on a croiſade. Soon after this Alexander paid him homage for his Engliſh eſtates; particularly for the lands and lordſhip of Penrith and others, which Henry had given him along with his daughter. He proved [illegible] ally to Edward in his wars againſt the Welſh; and the latter gave a charter, by which he acknowledged that the ſervices of the king of Scotland in thoſe wars were not in conſequence of his holding lands in England, [illegible] Even at this time, however, Edward

Scotland.

78
Designs of Edward I. against the liberties of Scotland.

had formed a design on the liberties of that kingdom; for in the charter just mentioned, he inserted a salvo, acknowledging the superiority, by which he reserved his right to the homage of the kingdom of Scotland, when it should be claimed by him or his heirs. The bishop of Norwich suggested this salvo: and this was the reason why Alexander would not perform the homage in person, but left it to be performed by Robert Bruce earl of Carric; Alexander standing by, and expressly declaring, that it was only paid for the lands he held in England.—No acts of hostility, however, took place during the lifetime of Alexander, who was killed on the 19th of March 1285, in the 45th year of his age, by his horse rushing down the black rock near Kinghorn as he was hunting.

Both before and after the death of Alexander, the great subjects of Scotland seemed to have been sensible of Edward's ambitious designs. On the marriage of Margaret with Eric prince of Norway, the states of Scotland passed an act obliging themselves to receive her and her heirs as queen and sovereigns of Scotland. Edward at that time was in no condition to oppose this measure, in which the Scots were unanimous; and therefore contented himself with forming factions among the leading men of the country. Under pretence of resuming the cross, he renewed his intrigues at the court of Rome, and demanded leave from the pope to collect the tenths in Scotland; but his holiness replied, that he could make no such grant without the consent of the government of Scotland. On the death of Margaret queen of Norway, her daughter, in consequence of the act abovementioned, was recognized by the states as queen of Scotland. As she was then but two years old, they came to a resolution of excluding from all share in the government, not only Edward I. but their queen's father; and they accordingly established a regency from among their own number, consisting of the six following noblemen; viz. Robert Wishart bishop of Glasgow, Sir James Cummin of Badenoch, senior, James lord high steward of Scotland, who were to have the superintendency of all that part of Scotland which lay to the south of the Forth; William Fraser bishop of St Andrews, Duncan M'Duff earl of Fife, and Alexander Cummin earl of Buchan, who were to have the direction of all affairs to the north of the same river.—With these arrangements Eric was exceedingly displeased, as considering himself as the only rightful guardian of his own child. He therefore cultivated a good correspondence with Edward, from whom he had received considerable pecuniary favours; and perceiving that the states of Scotland were unanimous in excluding all foreigners from the management of their concerns, he fell in with the views of the king of England, and named commissioners to treat with those of Edward upon the Scots affairs. These negociations terminated in a treaty of marriage between the queen of Scotland and Edward prince of Wales, young as they both were. This alarmed the states of Scotland, who resolved not to suffer their queen to be disposed of without their consent. It was therefore agreed by the commissioners on both sides, to acquaint them with the result of their conferences, and to demand that a deputation should be sent up for settling the regency of Scotland, or, in other words, for putting the sovereign power into the hands of the two kings. As the two parties, however, were within the prohibited degrees of consanguinity, being first cousins, a dispensation was applied for to Pope Boniface, who granted it on condition that the peers of Scotland consented to the match.

79
Treaty of marriage between the young queen of Scotland and the prince of Wales.

Though the Scots nobility were very much against this match, they could not refuse their consent to it when proposed by the father and grand-uncle of their young queen. They therefore appointed the bishops of St Andrew's and Glasgow, with Robert Bruce lord of Annandale, and John Cummin, to attend as their deputies, but with a salvo to all the liberties and honours of the realm of Scotland; to which Edward agreed. These deputies met at Salisbury with those of England and Norway; and it was at last agreed, 1. That the young queen should be sent from Norway (free of all marriage-engagements) into England or Scotland. 2. That if the queen came to England, she should be at liberty to repair to Scotland as soon as the distractions of that kingdom should be settled: that she should, on her arrival in her own dominions, be free of all matrimonial contracts; but that the Scots should engage not to dispose of her in marriage without her father or Edward's consent. 3. The Scots deputies promised to give such security as the Norwegian commissioners should require, that the tranquillity of the nation should be settled before her arrival. 4. That the commissioners of Scotland and Norway, joined with commissioners from England, should remove such regents and officers of state in Scotland as should be suspected of disaffection, and place others in their stead. If the Scots and Norwegian commissioners should disagree on that or any other head relating to the government of Scotland, the decision was to be left to the arbitration of English commissioners.

The party of Edward was now so strong in Scotland, that no opposition was made to the late agreement, in a parliament held at Brechin to deliberate upon the settlement of the kingdom. It is uncertain whether he communicated in form to the Scottish parliament the pope's dispensation for the marriage: but most probably he did not; as, in a letter written to him by the states of Scotland, they mention this as a matter they heard by report. On the whole, however, they highly approved of the marriage, upon certain conditions to which Edward was previously to agree; but the latter, without waiting to perform any conditions, immediately sent for the young queen from Norway. This exceedingly displeased Eric, who was by no means inclined to put his daughter into the hands of a prince whose sincerity he suspected, and therefore shifted off the departure of the princess till he should hear farther from Scotland. Edward, alarmed at this, had again recourse to negociation; and ten articles were at last drawn up, in which the Scots took all imaginable precautions for the safety and independency of their country. These articles were ratified by Edward on the 28th of August 1289; yet, even after the affair of the marriage was fully settled, he lost no time in procuring as strong a party as he could. At the head of these were the bishop of St Andrew's and John Baliol. That prelate, while he was in England, was highly caressed by Edward, from whom he had great expectations of preferment; and Baliol, having great estates in England, considered the latter as his sovereign. The bishop,

Scotland. shop, on his return to Scotland, acted as a spy for Edward, and carried on with him a secret correspondence, informing him of all public transactions. It appears from this correspondence, that the Scots were far from being unanimous as to the marriage. Bruce earl of Annandale suspected, for some reason or other, that the young queen was dead; and, soon after Michaelmas 1290, assembled a body of forces, and was joined by the earl of Mar and Athol. Intelligence of these commotions was carried to Edward by Baliol; and the bishop of St Andrew's advised Edward, in case the report of the queen's death should prove true, to march a body of troops towards Scotland, in order to secure such a successor as he thought proper.

Edward, in the mean time, consented to allow ambassadors to be sent from Scotland to bring over the young queen; previous to which, he appointed the bishop of Durham to be lieutenant in Scotland for the queen and her future husband; and all the officers there, both civil and military, obliged themselves to surrender their employments and fortresses to the king and queen (that is, to Edward) immediately on their arrival in Scotland. But while the most magnificent preparations were making for the reception of the young queen, certain intelligence of her death was received; but it is not certainly known whether this event happened before the arrival of the ambassadors in Norway or after her departure from that country.

80 Death of the queen.

The Scots were thrown into the utmost consternation by the news of their queen's death; while, on the other hand, Edward was as well prepared as if he had known what was to happen. The state of Scotland at this time indeed was to the last degree deplorable. The act of succession established by the late king had no farther operation, being determined by the death of the queen; and since the crown was rendered hereditary, there was no precedent by which it could be settled. The Scots, in general, however, turned their eyes upon the posterity of David earl of Huntingdon, brother to the two kings Malcolm the Maiden and his successor William, both of whom died without lawful issue. The earl had three daughters. Margaret, the eldest, was married to Allan lord of Galloway; the only issue of which marriage was Dervorguill wife to John Baliol, who had a son of the same name, a competitor for the crown. The second daughter, Isabella, was married to Robert Bruce; and their son Robert was a candidate likewise. The third daughter, Ada, had been married to Henry Hastings, an English nobleman, and predecessor to the present earl of Huntingdon. John Hastings, the son of this marriage, was a third competitor; but as his claim was confessedly the worst of the three, he only put in for a third of the kingdom, on the principle that his mother was joint-heir with her two sisters (c). Several other claimants now started up. Florence earl of Holland pretended to the crown of Scotland in right of his great grandmother Ada, the eldest lawful sister of William, sometime king; as did Robert de Pynkeney, in the right also of his great grandmother Marjory, second sister of the same king William. Patrick Gallightly was the son of Henry Gallightly, a bastard of William; William de Ross was descended of Isabel; Patrick earl of March, of Ilda or Ada; and William de Vesci, of Marjory; who were three natural daughters of king William. Roger de Mandeville, descended from Auffic, another natural daughter of William, also put in his claim; but the right of Nicolas de Soulis, if bastards could give a right, was better than the former. His grandmother Marjory, the wife of Allan le Huidier, was a natural daugher of Alexander II. and consequently sister to Alexander III. John Cummin lord of Badenoch derived his claim from a more remote source, viz. Donald Bane, who usurped the crown about 200 years before this time; but he was willing to resign his pretensions in favour of John Baliol. The latter indeed had surely the best right; and, had the succession been regulated as it is in all hereditary kingdoms at this day, he would undoubtedly have carried it. Bruce and Hastings, however, pleaded that they were preferable, not only to John Baliol, the grandchild of Margaret, but also to Dervorguill her daughter and his mother, for the following reason. Dervorguill and they were equally related to their grandfather earl David: she was indeed the daughter of his eldest daughter; but she was a woman, they were men; and, said they, the male in the same degree ought to succeed to sovereignties, in their own nature impartible, preferable to the female.

81 A number of competitors for the crown.

Notwithstanding this number of candidates, however,

(c) The pedigree of the three principal competitors will be fully understood from the following scheme.

David I. King of Scots.

Henry Prince of Scotland.

David Earl of Huntingdon, second son.

3. Ada=Henry de Hastings.	2. Isabella=Robert Bruce.	1. Margaret=Allan of Galloway.
Henry de Hastings.	Robert Bruce. *Competitor.*	John Baliol=Dervorguil.
John de Hastings, *Competitor.*		John Baliol, *Competitor.*

Scotland. ever, it was ſoon perceived, that the claims of all of them might be cut off excepting two, viz. Baliol and Bruce, of whom the former had the preference with reſpect to hereditary right, and the latter as to popularity. Baliol had ſtrongly attached himſelf to Edward's party; which being by far the moſt powerful in Scotland, gave him a decided ſuperiority over Bruce. The event was, that Edward, by his own party moſt probably, though, ſome ſay, by the unanimous voice of the Scots parliament, was appointed to decide between the two competitors. It ſoon appeared, however, that Edward had no mind to adjudge the crown to any perſon but himſelf; for, in an aſſembly held at Norham on the 10th of May 1291, Brabanzon the chief juſtice of England informed the members, "That his maſter was come thither in conſideration of the ſtate of the realm of Scotland, which was then without a king, to meet them, as *direct ſovereign* of that kingdom, to do juſtice to the claimants of his crown, and to eſtabliſh a ſolid tranquillity among his people; that it was not his intention to retard juſtice, nor to uſurp the right of any body, or to infringe the liberties of the kingdom of Scotland, but to render to every one his due. And to the end this might be done with the more eaſe, he required the aſſent of the ſtates *ex abundante*, and that they ſhould own him as *direct ſovereign* of the kingdom; offering, upon that condition, to make uſe of their counſels to do what juſtice demanded." The deputies were aſtoniſhed at this declaration, and replied, that they were by no means prepared to decide on Edward's claim of ſuperiority; but that Edward ought previouſly to judge the cauſe between the two competitors, and require homage from him whom he ſhould chooſe to be king. Edward treated this excuſe as trifling, and gave them till next day to conſider of his demand. Accordingly, on that day, the aſſembly was held in Norham church, where the deputies from Scotland inſiſted upon giving no anſwer to Edward's demands, which could be decided only by the whole community; repreſenting, at the ſame time, that numbers of the noblemen and prelates were abſent, and that they muſt have time to know their ſenſe of the affair. In conſequence of this, Edward gave them a delay of three weeks; which interval he employed in multiplying claimants to the crown of Scotland, and in flattering each with hopes, if he would acknowledge his ſuperiority. But when the aſſembly met, according to appointment, on the 2d of June following, they found the place of meeting ſurrounded by a numerous army of Engliſh. Edward had employed the biſhop of Durham to draw up the hiſtorical evidence of his right to the crown of Scotland; which has ſince been publiſhed. In this paper mention is made of the fealty and homage performed by the kings of Scotland to the Anglo-Saxon kings of England; but no ſufficient evidence is brought of any ſuch homage being actually performed. As to the homage performed by the kings of Scotland from the time of William the Conqueror to that of the diſpute between Bruce and Baliol, the Scots never denied it; but they contended, and indeed with juſtice, that it was performed for the lands which they held from the crown of England; and they alleged, that it was as far removed from any relation to a fealty or homage performed for the crown of Scotland, as the homage paid by the Engliſh monarchs to the crown of France was removed from all relation to the crown of England. With regard to the homage paid by William king of Scotland to Henry II. of England, it was not denied that he performed it for the whole kingdom of Scotland: but they pleaded, that it was void of itſelf, becauſe it was extorted when William was a priſoner to Henry; and they produced Richard I.'s charters, which pronounced it to have been compulſive and iniquitous. Scotland.

82 Edward declares himſelf ſovereign of Scotland.

But, however urgent theſe reaſons of the Scots might be, Edward was by no means diſpoſed to examine into their merits. Inſtead of this, he cloſeted the ſeveral pretenders to the crown; and having found them all ready to comply with his meaſures, he drew up the following charter of recognition to be ſigned by them all.

83 The candidates ſign an aſſent.

"To all who ſhall hear this preſent letter.

"We Florence earl of Holland, Robert de Bruce lord of Annandale, John Baliol lord of Galloway, John Haſtings lord of Abergavenny, John Cummin lord of Badenoch, Patrick de Dunbar earl of March, John Veſci for his father Nicholas Soulis, and William de Roſs, greeting in the Lord:

"Whereas we intend to purſue our right to the kingdom of Scotland; and to declare, challenge, and aver the ſame before him that hath moſt power, juriſdiction, and reaſon to try it; and the noble prince Edward, by the grace of God king of England, &c. having informed us, by good and ſufficient reaſons, that to him belongs the ſovereign ſeigniory of the ſame: We therefore promiſe, that we will hold firm and ſtable his act; and that he ſhall enjoy the realm to whom it ſhall be adjudged before him. In witneſs whereof, we have ſet our ſeals to this writing, made and granted at Norham, the Tueſday after the Aſcenſion, in the year of Grace 1291."

Edward then declared, by the mouth of his chancellor, that although, in the diſpute which was ariſen between the ſeveral claimants, touching the ſucceſſion to the kingdom of Scotland, he acted in quality of ſovereign, in order to render juſtice to whomſoever it was due; yet he did not thereby mean to exclude himſelf from the hereditary right which in his own perſon he might have to that crown, and which right he intended to aſſert and improve when he ſhould think fit: and the king himſelf repeated this proteſtation with his own mouth in French. The candidates were then ſeverally called upon by the Engliſh chancellor, to know whether they were willing to acknowledge Edward's claim of ſuperiority over the crown of Scotland, and to ſubmit to his award in diſpoſing of the ſame; which being anſwered in the affirmative, they were then admitted to prove their rights. But this was mere matter of form; for all the force of England was then aſſembled on the borders in order to ſupport the claims of Edward, and nothing now remained but to furniſh him with a ſufficient pretence for making uſe of it. He obſerved, that the Scots were not ſo unanimous as they ought to be in recogniſing his ſuperiority, and that the ſubmiſſion, which had been ſigned by the candidates, was not ſufficient to carry it into execution; for which reaſon he demanded that all the forts poſſeſſion in Scotland ſhould be put into his poſſeſſion, that he might reſign them to the ſucceſsful candidate.

84 Edward demands poſſeſſion of all the fortified places in Scotland.

Though nothing could be more ſhameful than a tame com-

Scotland. compliance with this laft demand of Edward, the regency of Scotland without hefitation yielded to it alſo; for which they gave the following reaſons. "That whereas they (the ſtates of Scotland) had, with one aſſent, already granted that King Edward, as ſuperior lord of Scotland, ſhould give ſentence as to their ſeveral rights and titles to the crown of Scotland, &c. but as the ſaid king of England cannot put his judgement in full execution to anſwer effectually without the poſſeſſion or reſign of the ſaid country and its caſtles; we will, grant, and aſſent, that he, as ſovereign lord thereof, to perform the things aforeſaid, ſhall have ſeiſin of all the lands and caſtles in Scotland until right be done to the demandants, and to the guardians and community of the kingdom of Scotland, reſtore both it and its caſtles, with all the royalties, dignities, franchiſes, cuſtoms, rights, laws, uſages, and privileges, with their appurtenances, in the ſame ſtate and condition they were in when he received them, leaving to the king of England the homage which the ſhall owe king; ſo as they may be reſtored within two months after the day the right ſhall be determined and affirmed; and that the profits of the nation which ſhall be received in the mean time ſhall be kept in the hands of the chamberlain of Scotland that now is, and one to be joined with him by the king of England; ſo as the charge of the government, caſtles, and officers of the realm, may be deducted. In witneſs whereof, &c."

85 Which is agreed to by the ſtates.

For theſe reaſons, as it is ſaid, the regency put into the hands of Edward all the forts in the country. Gilbert de Umfreville alone, who had the command of the caſtles of Dundee and Forfar, refuſed to deliver them up, until he ſhould be indemnified by the ſtates, and by Edward himſelf, from all penalties of treaſon of which he might afterwards be in danger.

But though Edward had thus got into his hands the whole power of the nation, he did not think proper to determine every thing by his own authority. Inſtead of this he appointed commiſſioners, and promiſed to grant letters-patent declaring that ſentence ſhould be paſſed in Scotland. It had been all along foreſeen that the great diſpute would be between Bruce and Baliol; and though the plea of Cummin was judged frivolous, yet he was a man of too much influence to be neglected, and he agreed tacitly to refuſe it in favour of Baliol. Edward accordingly made him the compliment of joining him with Baliol in nominating 40 commiſſioners. Bruce was to name 40 more; and the names of the 80 were to be given in to Edward in three days; after which the king was to add to them 24 of his own chooſing. The place and time of meeting were left in their own option. They unanimouſly pitched upon Berwick for the place of meeting; but as they could not agree about the time, Edward appointed the 2d of Auguſt following. Soon after this, the regents reſigned their commiſſions to Edward; but he returned them, with powers to act in his name; and he nominated the biſhop of Caithneſs to be chancellor of Scotland; joining in the commiſſion with him Walter de Hemondeſham an Engliſhman, and one of his own ſecretaries. Still, however, he met with great difficulties. Many of his own great men, particularly the earl of Glouceſter, were by no means fond of increaſing the power of the Engliſh monarch by the acquiſition of Scotland; and therefore threw ſuch obſtacles in his way, that he was again obliged to have recourſe to negociation and intrigue, and at laſt to delay the meeting until the 2d of June in 1292: but during this interval, that he might the better reconcile the Scots to the loſs of their liberty, he propoſed an union of the two kingdoms; and for this he found a ready by virtue of his ſuperiority.

Scotland.

86 Commiſſioners appointed to determine the pretenſions of the candidates.

The commiſſioners having met on the 2d of June 1292, ambaſſadors from Norway preſented themſelves in the aſſembly, demanding that their maſter ſhould be admitted into the number of the claimants, as father and next heir to the late queen. This demand too was admitted by Edward, after the ambaſſadors had acknowledged his ſuperiority over Scotland; after which he propoſed that the claims of Bruce and Baliol ſhould be previouſly examined, but without prejudice to thoſe of the other competitors. This being agreed to, he ordered the commiſſioners to examine by what laws they ought to proceed in forming their report. The diſcuſſion of this queſtion was attended with ſuch difficulty, and the opinions on it were ſo various, that Edward once more adjourned the aſſembly to the 12th of October following; at which time he required the members to give their opinions on the two following points: 1. By what laws and cuſtoms they ought to proceed to judgment; and, ſuppoſing there could be no law or precedent found in the two kingdoms, in what manner? 2. Whether the kingdom of Scotland ought to be taken in the ſame view as all other fiefs, and to be awarded in the ſame manner as earldoms and baronies? The commiſſioners replied, that Edward ought to give juſtice conformable to the uſage of the two kingdoms; but that if no certain laws or precedents could not be found, he might, by the advice of his great men, enact a new law. In anſwer to the ſecond queſtion they ſaid, that the ſucceſſion to the kingdom might be awarded in the ſame manner as to other eſtates and great baronies. Upon this, Edward ordered Bruce and Baliol to be called before him; and both of them urged their reſpective pleas, and anſwers, to the following purpoſe.

87 Pleas of Bruce and Baliol.

Bruce pleaded, 1. That Alexander II. deſpairing of heirs of his own body, had declared that he held him to be the true heir, and offered to prove by the teſtimony of perſons ſtill alive, that he declared this with the advice and in the preſence of the good men of his kingdom. Alexander III. alſo had declared to thoſe with whom he was intimate, that, failing iſſue of his own body, Bruce was his right heir. The people of Scotland had taken an oath for maintaining the ſucceſſion of the neareſt in blood to Alexander III. who ought of right to inherit, failing Margaret the Maiden of Norway and her iſſue.—Baliol anſwered, that nothing could be concluded from the acknowledgment of Alexander II. for that he left heirs of his body; but made no anſwer to what was ſaid of the ſentiments of Alexander III. and of the oath made by the Scottiſh nation to maintain the ſucceſſion of the next of blood.

2. Bruce pleaded, that the right of reigning ought to be decided according to the natural law, by which kings reign; and not according to any law or uſage in force between ſubject and ſubject: That by the law of nature, the neareſt collateral in blood has a right to the crown; but that the conſtitutions which prevail among vaſſals, bind not the lord, much leſs the ſovereign: That although in private inheritances, which

are divided, the eldeſt female heir has a certain prerogative, it is not ſo in a kingdom that is indiviſible; there the neareſt heir of blood is preferable whenever the ſucceſſion opens.—To this Baliol replied, that the claimants were in the court of their lord paramount; and that he ought to give judgment in this caſe, as in the caſe of any other tenements, depending on his crown, that is, by the common law and uſage of his kingdom, and no other. That by the laws and uſages of England, the eldeſt female heir is preferred in the ſucceſſion to all inheritances, indiviſible as well as diviſible.

3. It was urged by Bruce, that the manner of ſucceſſion to the kingdom of Scotland in former times, made for his claim; for that the brother, as being neareſt in degree, was wont to be preferred to the ſon of the deceaſed king. Thus, when Kenneth Macalpin died, his brother Donald was preferred to his ſon Conſtantine, and this was confirmed by ſeveral other authentic inſtances in the hiſtory of Scotland. Baliol anſwered, that if the brother was preferred to the ſon of the king, the example proved againſt Bruce; for that the ſon, not the brother, was the neareſt in degree. He admitted, that after the death of Malcolm III. his brother uſurped the throne; but he contended, that the ſon of Malcolm complained to his liege lord the king of England, who diſpoſſeſſed the uſurper, and placed the ſon of Malcolm on the throne; that after the death of that ſon the brother of Malcolm III. again uſurped the throne; but the king of England again diſpoſſeſſed him, and raiſed Edgar, the ſecond ſon of Malcolm, to the ſovereignty.

4. Bruce pleaded, that there are examples in other countries, particularly in Spain and Savoy, where the ſon of the ſecond daughter excluded the grandſon of the eldeſt daughter. Baliol anſwered, that examples from foreign countries are of no importance; for that according to the laws of England and Scotland, where kings reign by ſucceſſion in the direct line, and earls and barons ſucceed in like manner, the iſſue of the younger ſiſter, although nearer in degree, excludes not the iſſue of the eldeſt ſiſter, although more remote; but the ſucceſſion continues in the direct line.

5. Bruce pleaded, that a female ought not to reign, as being incapable of governing: That at the death of Alexander III. the mother of Baliol was alive; and as ſhe could not reign, the kingdom devolved upon him, as being the neareſt male heir of the blood royal. But to this Baliol replied, that Bruce's argument was inconſiſtent with his claim: for that if a female ought not to reign, Iſabella the mother of Bruce ought not, nor muſt Bruce himſelf claim through her. Beſides, Bruce himſelf had ſworn fealty to a female, the maiden of Norway.

83 Judgment given in favour of Baliol,

The arguments being thus ſtated on both ſides, Edward demanded an anſwer from the council as to the merits of the competitors. He alſo put the following queſtion to them: By the laws and uſages of both kingdoms, does the iſſue of the eldeſt ſiſter, though more remote in one degree, exclude the iſſue of the ſecond ſiſter, though nearer in one degree? or ought the nearer in one degree, iſſuing from the ſecond ſiſter, to exclude the more remote in one degree iſſuing from the eldeſt ſiſter? To this it was anſwered unanimouſly, That by the laws and uſages of both kingdoms, in every heritable ſucceſſion, the more remote in one degree lineally deſcended from the eldeſt ſiſter, was preferable to the nearer in degree iſſuing from the ſecond ſiſter. In conſequence of this, Bruce was excluded from the ſucceſſion; upon which he entered a claim for one third of the kingdom: but being baffled in this alſo, the kingdom of Scotland being determined an indiviſible fee, Edward ordered John Baliol to have ſeiſin of Scotland; with this caveat, however, "That this judgment ſhould not impair his claim to the property of Scotland." Scotland.

89 Who is crowned at Scone.

After ſo many diſgraceful and humiliating conceſſions on the part of the Scots, John Baliol was crowned king at Scone on the 30th November 1292; and finiſhed the ceremony by doing homage to the king of England. All his ſubmiſſions, however, could not ſatisfy Edward, as long as the leaſt ſhadow of independence remained to Scotland. A citizen of Berwick appealed from a ſentence of the Scots judges appointed by Edward, in order to carry his cauſe into England. But this was oppoſed by Baliol, who pleaded a promiſe made by the Engliſh monarch, that he ſhould "obſerve the laws and uſages of Scotland, and not withdraw any cauſes from Scotland into his Engliſh courts." Edward replied, that it belonged to him to hear the complaints made againſt his own miniſters; and concluded with aſſerting his right, not only to try Scots cauſes in England, but to ſummon the king of Scotland, if neceſſary, to appear before him in perſon. Baliol had not ſpirit to reſiſt; and therefore ſigned a moſt diſgraceful inſtrument, by which he declared, that all the obligations which Edward had come under were already fulfilled, and therefore that he diſcharged them all.

90 Haughty behaviour of Edward.

Edward now thought proper to give Baliol ſome marks of his favour, the moſt remarkable of which was giving him ſeiſin of the Iſle of Man; but it ſoon appeared that he intended to exerciſe his rights of ſuperiority in the moſt provoking manner. The firſt inſtance was in the caſe of Malcolm earl of Fife. This nobleman had two ſons, Colban his heir, and another who is conſtantly mentioned in hiſtory by the family-name of Macduff.—It is ſaid, that Malcolm put Macduff in poſſeſſion of the lands of Reres and Crey. Malcolm died in 1266; Colban his ſon, in 1270; Duncan the ſon of Colban, in 1288. To this laſt earl, his ſon Duncan, an infant, ſucceeded. During the nonage of this Duncan, grand-nephew of Macduff, William biſhop of St Andrew's, guardian of the earldom, diſpoſſeſſed Macduff. He complained to Edward; who having ordered his cauſe to be tried, reſtored him again to poſſeſſion. Matters were in this ſtate when Baliol held his firſt parliament at Scone, 10th February 1292. There Macduff was cited to anſwer for having taken poſſeſſion of the lands of Reres and Crey, which were in poſſeſſion of the king ſince the death of the laſt earl of Fife. As his defences did not ſatisfy the court, he was condemned to impriſonment; but an action was reſerved to him againſt Duncan, when he ſhould come of age, and againſt his heirs. In all this defence, it is ſurpriſing that Macduff ſhould have omitted his ſtrongeſt argument, viz. that the regents, by Edward's authority, had put him in poſſeſſion, and that Baliol had ratified all things under Edward's authority. However, as ſoon as he was ſet at liberty, he petitioned Baliol for a rehearing; but this being refuſed, he appealed

Scotland.

91 He ſummons Baliol to appear before him.

to Edward, who ordered Baliol to appear before him in perſon on the 25th of March 1293: but as Baliol did not obey this order, he ſummoned him again to appear on the 14th of October. In the mean time the Engliſh parliament drew up certain *ſtanding orders* in caſes of appeal from the king of Scots; all of which were harſh and captious. One of theſe regulations provided, "that no excuſe of abſence ſhould ever be received either from the appellant, or the king of Scotland reſpondent; but that the parties might have counſel if they demanded it."

92 Who behaves with reſolution at his trial.

Though Baliol had not the courage to withſtand the ſecond ſummons of Edward, he behaved with conſiderable reſolution at the trial. The cauſe of Macduff being come on, Edward aſked Baliol what he had to offer in his own defence; to which he replied, "I am king of Scotland. To the complaint of Macduff, or to ought elſe reſpecting my kingdom, I dare not make anſwer without the advice of my people."—Edward affected ſurpriſe at this refuſal, after the ſubmiſſions which Baliol had already made him; but the latter ſteadily replied, "In matters reſpecting my kingdom, I neither *dare* nor *can* anſwer in this place, without the advice of my people." Edward then deſired him to aſk a further adjournment, that he might adviſe with the nation. But Baliol, perceiving that his doing ſo would imply an acquieſcence in Edward's right of requiring his perſonal attendance on the Engliſh courts, made anſwer, "That he would neither aſk a longer day, nor conſent to an adjournment."—It was then reſolved by the parliament of England, that the king of Scotland had offered no defence; that he had made evaſive and diſreſpectful anſwers: and that he was guilty of manifeſt contempt of the court, and of open diſobedience. To make recompenſe to Macduff for his impriſonment, he was ordered damages from the king of Scots, to be taxed by the court; and it was alſo determined that Edward ſhould inquire, according to the uſages of the country, whether Macduff recovered the tenements in queſtion by the judgment of the king's court, and whether he was diſpoſſeſſed by the king of Scots. It was alſo reſolved, that the three principal caſtles of Scotland, with the towns wherein they were ſituated, and the royal juriſdiction thereof, ſhould be taken into the cuſtody of the king, and there remain until the king of Scots ſhould make ſatisfaction for his contempt and diſobedience. But, before this judgment was publicly intimated, Baliol addreſſed Edward in the following words: "My lord, I am your liege man for the kingdom of Scotland; that, whereof you have lately treated, reſpects my people no leſs than myſelf: I therefore pray you to delay it until I have conſulted my people, leſt I be ſurpriſed through want of advice: They who are now with me, neither will nor dare adviſe me in abſence of the reſt of my kingdom. After I have adviſed with them, I will in your firſt parliament after Eaſter report the reſult, and do to you what I ought."

93 His ſentence.

94 Edward's demands on Scotland.

In conſequence of this addreſs, Edward, with conſent of Macduff, ſtopped all proceedings till the day after the feaſt of Trinity 1294. But before this term Edward was obliged to ſuſpend all proceedings againſt the Scots, by a war which broke out with France. In a parliament held this year by Edward, the king of Scotland appeared, and conſented to yield up the whole revenues of his Engliſh eſtates for three years to aſſiſt Edward againſt his enemies. He was alſo *requeſted* and *ordered* by Edward to extend an embargo laid upon the Engliſh veſſels all over Scotland; and this embargo to endure until the king of England's further pleaſure ſhould be known. He alſo requeſted him to ſend ſome troops for an expedition into Gaſcony, and required the preſence and aid of ſeveral of the Scotiſh barons for the ſame purpoſe. The Scots, however, eluded the commands of Edward, by pretending that they could not bring any conſiderable force into the field; and, unable to bear his tyranny any longer, they negociated an alliance with Philip king of France. Having aſſembled a parliament at Scone, they prevailed upon Baliol to diſmiſs all the Engliſhmen whom he maintained at his court. They then appointed a committee of twelve, four biſhops, four earls, and four barons, by whoſe advice every thing was to be regulated; and, if we may credit the Engliſh hiſtorians, they watched the conduct of Baliol himſelf, and detained him in a kind of honourable captivity. However, they could not prevent him from delivering up the caſtles of Berwick, Roxburgh, and Jedburgh, to the biſhop of Carliſle; in whoſe cuſtody they were to remain during the war between England and France, as a pledge of his allegiance. Notwithſtanding this, Baliol concluded the alliance with Philip; by which it was ſtipulated, that the latter ſhould give in marriage the eldeſt daughter of the count of Anjou to Baliol's ſon; and it was alſo provided, that Baliol ſhould not marry again without the conſent of Philip. The king of Scotland engaged to aſſiſt Philip in his wars at his own expence, and with his whole power, eſpecially if Edward invaded France; and Philip on his part engaged to aſſiſt Scotland, in caſe of an Engliſh invaſion, either by making a diverſion, or by ſending ſuccours.

95 The Scots enter into an alliance with France.

96 The Scots invade England without ſucceſs.

Puffed up with the hopes of aſſiſtance from France, the Scots invaded Cumberland with a mighty army, and laid ſiege to Carliſle. The men abandoned the place; but the women mounted the walls, and drove the aſſailants from the attack. Another incurſion into Northumberland proved almoſt as diſgraceful. Their whole exploits conſiſted in burning a nunnery at Lameley, and a monaſtery at Corbridge, though dedicated to their patron St Andrew; but having attempted to ſtorm the caſtle of Harbottle, they were repulſed with loſs. In the mean time Edward, with an army equal in number to that of the Scots, but much ſuperior on account of its diſcipline, invaded the eaſt coaſt of Scotland. Berwick had either not been delivered according to promiſe, or had been reſumed by the Scots, and was now defended by a numerous garriſon. Edward aſſaulted it by ſea and land. The ſhips which began the attack were all either burnt or diſabled; but Edward having led on his army in perſon, took the place by ſtorm, and cruelly butchered the inhabitants, to the number of 8000, without diſtinction of ſex or age. In this town there was a building called the *Red Hall*, which certain Flemings poſſeſſed by the tenure of defending it at all times againſt the king of England. Thirty of theſe maintained their ground for a whole day againſt the Engliſh army; but at night the building being ſet on fire, all of them periſhed in the flames. The ſame day the caſtle capitulated; the garriſon, conſiſting of 2000 men, marched out with all the honours

97 Berwick taken, and the inhabitants maſſacred by Edward.

Scotland.

of war, after having ſworn never to bear arms againſt England.

98 Baliol's renunciation of his allegiance to England.

In the mean time, Baliol, by the advice of his parliament, ſolemnly and openly renounced his allegiance to Edward, ſending the following declaration.

"To the magnificent prince, Edward, by the grace of God, king of England; John, by the ſame grace, king of Scotland.

"Whereas you, and others of your kingdom, you not being ignorant, or having cauſe of ignorance, by your violent power, have notoriouſly and frequently done grievous and intolerable injuries, contempts, grievances, and ſtrange damages againſt us, the liberties of our kingdom, and againſt God and juſtice; citing us, at your pleaſure, upon every ſlight ſuggeſtion, out of our kingdom; unduly vexing us; ſeizing our caſtles, lands, and poſſeſſions, in your kingdom; unjuſtly, and for no fault of ours, taking the goods of our ſubjects, as well by ſea as land, and carrying them into your kingdom; killing our merchants, and others of our kingdom; carrying away our ſubjects and impriſoning them: For the reformation of which things, we ſent our meſſengers to you, which remain not only unredreſſed, but there is every day an addition of worſe things to them; for now you are come with a great army upon the borders, for the diſinheriting us, and the inhabitants of our kingdom; and, proceeding, have inhumanly committed ſlaughter, burnings, and violent invaſions, as well by ſea as land: We not being able to ſuſtain the ſaid injuries, grievances, and damages any longer, nor to remain in your fealty or homage, extorted by your violent oppreſſion, we reſtore them to you, for ourſelf, and all the inhabitants of our kingdom, as well for the lands we hold of you in your kingdom, as for your pretended government over us."

Edward was preſented with this renunciation by the hands of the intrepid Henry abbot of Aberbrothwick; and as it was favourable to his political views, he received it rather with contempt than anger. "The fooliſh traitor," ſaid he to the abbot, "ſince he will not come to us, we will go to him." The abbot had been perſuaded by his enemies, of whom he had many in Scotland, to preſent this letter, in hopes that Edward would have put him to death; but he had addreſs enough to eſcape ſafe out of his hands, without receiving any other anſwer.

Though this ſcheme of renunciation had been concerted ſome time before, the declaration was not ſent to Edward till after the taking of Berwick. The fate of Scotland, however, after it, was ſoon decided. The Earl of March had taken part with Edward, but the counteſs betrayed his caſtle of Dunbar into the hands of the Scots. Edward ſent a choſen body of troops to recover the place. The whole force of Scotland oppoſed them on the heights above Dunbar; but leaving their advantageous poſt, and pouring down on their enemies in confuſion, they were diſperſed and defeated. Scotland.

99 The Scots defeated at Dunbar.

The caſtle of Dunbar ſurrendered at diſcretion; that of Roxburgh followed the ſame example; the caſtle of Edinburgh ſurrendered after a ſhort ſiege; and Stirling was abandoned. The Scots, in the mean time, were guilty of the greateſt extravagances. During the ſhort interval between the loſs of Berwick and the defeat at Dunbar, an order was made for expelling all the Engliſh eccleſiaſtics who held benefices in England; all the partizans of England, and all neutrals, were declared traitors, and their eſtates confiſcated. But the great ſucceſſes of Edward ſoon put an end to theſe impotent acts of fury. Baliol was obliged to implore the mercy of the conqueror. Diveſted of his royal ornaments, and bearing a white rod in his hand, he performed a moſt humiliating penance; confeſſing, that by evil and falſe counſel, and through his own ſimplicity, he had grievouſly offended his liege lord. He recapitulated his various tranſgreſſions, in concluding an alliance with France while at enmity with England; in contracting his ſon with the niece of the French king; in renouncing his fealty; in attacking the Engliſh territories, and in reſiſting Edward. He acknowledged the juſtneſs of the Engliſh invaſion and conqueſt; and therefore he, of his own free conſent, reſigned Scotland, its people, and their homage, to his liege-lord Edward, 2d July 1296.

100 Baliol ſubmits, and does penance.

The king of England purſued his conqueſts, the barons everywhere crowding in to ſwear fealty to him, and renounce their allegiance with France. His journey ended at Elgin, from whence he returned ſouthward; and, as an evidence of his having made an abſolute conqueſt of Scotland, he carried off from Scone the wooden chair in which the kings were wont to be crowned. This chair had for its bottom the fatal ſtone regarded as the national palladium (D). Some of the charters

101 Scotland ſubdued.

(D) "This ſtone is thus deſcribed by W. Hemingford, T. i. p. 37. "Apud monaſterium de Scone poſitus erat lapis pergrandis in eccleſia Dei, juxta magnum altare, concavus quidem *ad modum rotundæ cathedræ confectus*, in quo futuri reges loco quaſi coronationis ponebantur ex more. Rege itaque novo in lapide poſito, miſſarum ſolemnia incepta peraguntur, et præterquam in elevatione ſacri dominici corporis, ſemper lapidatus, manſit." And again, T. i. p. 100. "In redeundo per Scone, præcepit tolli et Londoniis cariari, *lapidem* illum, in quo, ut ſupra dictum eſt, Reges Scotorum ſolebant poni loco coronationis ſuæ *et hoc in ſignum regni conqueſti et reſignati*." Walſingham mentions the uſe to which Edward put this ſtone: "Ad Weſtm naſterium tranſtulit illum, jubens inde fieri celebrantium cathedram ſacerdotum." This account of *the fatal ſtone* is here tranſcribed, that it may be compared with the appearance of the ſtone that now bears its name at Weſtminſter.

Fordun has preſerved the ancient rhymes concerning it; L. xi. c. 25.

"Hic rex ſic totam Scotiam fecit ſibi notam,
Qui ſine menſura tulit inde jocalia plura,
Et pariter lapidem, Scotorum quem fore ſedem
Regum decrevit fatum; quod ſic inolevit,
Ni fallat fatum, Scoti quocunque locatum
Invenient lapidem, regnare tenentur ibidem."

This

Scotland. charters belonging to the abbey were carried off, and the ſeals torn from others: "which," ſays Lord Hailes, "is the only well-vouched example which I have found of any outrage on private property committed by Edward's army. It is mentioned in a charter of Robert I. and we may be aſſured that the outrage was not diminiſhed in the relation."

On the 28th of Auguſt 1296, Edward held a parliament at Berwick, where he received the fealty of the clergy and laity of Scotland. It is ſaid, that while the Engliſh monarch was employed in the conqueſt of Scotland, he had promiſed the ſovereignty to Robert Bruce, lord of Annandale, in order to ſecure his fidelity; but being put in mind of his promiſe, he anſwered, "Have I no other buſineſs but to conquer kingdoms for you?" Bruce ſilently retired, and paſſed his days in obſcurity. Among thoſe who profeſſed their allegiance at this parliament was Robert Bruce the younger, earl of Carrick. After this, Edward took the moſt effectual methods of ſecuring his new conqueſt. He ordered the eſtates of the clergy to be reſtored; and having received the fealty of the widows of many of the Scottiſh barons, he put them in poſſeſſion of their jointure-lands, and even made a decent proviſion for the wives of many of his priſoners. Yet, though in every thing he behaved with great moderation towards the Scots, he committed the government of certain diſtricts, and of the chief caſtles in the ſouth of Scotland, to his Engliſh ſubjects, of whoſe fidelity and vigilance he thought himſelf aſſured. In order to conciliate the affections of the clergy, he granted to the Scottiſh biſhops, for ever, the privilege of bequeathing their effects by will, in the ſame manner as that privilege was enjoyed by the archbiſhops and biſhops of England. In honour of the "glorious Confeſſor St Cuthbert," he gave to the monks of Durham an annual penſion of 40 pounds, payable out of the revenues of Scotland, by the tenure of maintaining, before the ſhrine of the ſaint, two wax-tapers of 20 pounds weight each, and of diſtributing twice a-year one penny each to 3000 indigent perſons. At laſt, having ſettled every thing, as he thought, in tranquillity, he departed for England, with all the pride of a conqueror.

102 New diſturbances

The tranquillity eſtabliſhed by Edward, however, was of ſhort duration. The government of Scotland at that time required many qualities which Edward's vicegerents had not. Warrenne, earl of Surry, who had been appointed governor, took up his abode in England, on pretence of recovering his health. Creſſingham, the treaſurer, was a voluptuous, proud, and ſelfiſh eccleſiaſtic; while Ormeſby the juſticiary was hated for his ſeverity. Under theſe officers the adminiſtration of Edward became more and more feeble; bands of robbers infeſted the highways, and the Engliſh government was univerſally deſpiſed. At this critical moment aroſe Sir

103 Sir William Wallace.

William Wallace, the hero ſo much celebrated in Scottiſh fables, and by which indeed his real exploits are ſo much obſcured, that it is difficult to give an authentic relation of them. The moſt probable account is, that he was the younger ſon of a gentleman (Wallace of Elderſlie) in the neighbourhood of Paiſley. Having been outlawed for ſome offence (generally ſuppoſed to have been the killing of an Engliſhman), he aſſociated with a few companions, of fortunes equally deſperate with his own. Wallace himſelf was endowed with great ſtrength and courage, and an active and ambitious ſpirit; and by his affinity, eloquence, and wiſdom, he maintained an authority over the rude and undiſciplined multitudes who flocked to his ſtandard. In May 1297, he began to infeſt the Engliſh quarters; and being ſucceſsful in his predatory incurſions, his party became more numerous, and he was joined by Sir William Douglas. With their united forces, theſe two allies attempted to ſurpriſe Ormeſby the juſticiary, while he held his courts at Scone; but he ſaved himſelf by a precipitate flight. After this the Scots roved over the whole country, aſſaulted caſtles, and maſſacred the Engliſh. Their party was joined by many perſons of rank; among whom were Robert Wiſheart biſhop of Glaſgow, the Steward of Scotland and his brother Alexander de Lindſay, Sir Richard Lundin, and Sir Andrew Moray of Bothwell. Young Bruce would have been a vaſt acceſſion to the party; for he poſſeſſed all Carrick and Annandale, ſo that his territories reached from the frith of Clyde to Solway. But the wardens of the weſtern marches of England ſuſpected his fidelity, and ſummoned him to Carliſle. He obeyed, and made oath on the conſecrated hoſt, and on the ſword of Becket, to be faithful and vigilant in the cauſe of Edward; and to prove his ſincerity he invaded with fire and ſword the eſtate of Sir William Douglas, and carried off his wife and children. However, he inſtantly repented of what he had done: "I truſt (ſaid he), that the pope will abſolve me from an extorted oath;" on which he abandoned Edward and joined the Scottiſh army.

All this time Edward was in France, not in the leaſt ſuſpecting an inſurrection among people whom he imagined he had thoroughly ſubdued. As ſoon as he received the intelligence, he ordered the earl of Surry to ſuppreſs the rebels; but he declining the command of the army himſelf on account of his health, reſigned it to his nephew, Lord Henry Percy. A great army, ſome ſay no fewer than 40,000 men, was now aſſembled, with which Percy marched againſt the Scots. He found them encamped at Irwin, with a lake in their front, and their flanks ſecured by entrenchments, ſo that they could not be attacked without the utmoſt danger. The Scots, however, ruined every thing by their diſſenſions. Wallace was envied on account of his accompliſhments, which had raiſed his reputation above the other officers, whoſe birth and circumſtances were higher than his. His companions accordingly became jealous, and began to ſuggeſt, that an oppoſition to the Engliſh could only be productive of further national deſtruction. Sir Richard Lundin, an officer of great rank, formed a party againſt Wallace, and went over to Edward with all his followers. He attempted to juſtify his

104 Diſſenſions of the Scots.

This was the ſtone which Gathelus ſent from Spain with his ſon when he invaded Ireland, which king Fergus won in Ireland, brought over with him, and placed at Scone. As the moſt proper authority for a ſtory of this nature, ſee *Acts of Sir William Wallace, by Blind Harry*, B. i. c. 4.

Scotland.

his treachery, by ſaying, "I will remain no longer of a party that is at variance with itſelf;" without conſidering that he himſelf, and his party, were partly the occaſion of that variance. Other leaders entered into a negociation with the Engliſh. Bruce, the Steward and his brother Alexander de Lindeſay, and Sir William Douglas, acknowledged their offences, and made ſubmiſſions to Edward for themſelves and their adherents.

105 Moſt of them ſubmit to the Engliſh.

This ſcandalous treaty ſeems to have been negociated by the biſhop of Glaſgow, and their recantation is recorded in the following words.—"Be it known to all men: Whereas we, with the commons of our country, did riſe in arms againſt our lord Edward, and againſt his peace, in his territories of Scotland and Galloway, did burn, ſlay, and commit divers robberies; we therefore, in our own name, and in the name of all our adherents, agree to make every reparation and atonement that ſhall be required by our ſovereign lord; reſerving always what is contained in a writing which we have procured from Sir Henry Percy and Sir Robert Clifford, commanders of the Engliſh forces; at Irvine, 9th July 1297." To this inſtrument was ſubjoined, "Eſcrit a Sire Willaume;" the meaning of which lord Hailes ſuppoſes to be, that the barons had notified to Sir William Wallace their having made terms of accommodation for themſelves and their party.

Edward accepted the ſubmiſſion of the Scottiſh barons who had been in arms, and granted liberty to thoſe whom he had made priſoners in the courſe of the former year, on condition that they ſhould ſerve him in his wars againſt France. The inconſtancy of Bruce, however, was ſo great, that acknowledgments of ſubmiſſion or oaths of fealty were not thought ſufficiently binding on him; for which reaſon the biſhop of Glaſgow, the Steward, and Alexander de Lindeſay, became ſureties for his loyalty and good behaviour, until he ſhould deliver his daughter Marjory as an hoſtage.

106 Wallace ſtill holds out.

Wallace alone refuſed to be concerned in theſe ſhameful ſubmiſſions; and, with a few reſolute followers, reſolved to ſubmit to every calamity rather than give up the liberty of his country. The barons had undertaken to procure his ſubmiſſion as well as their own; but finding that to be impoſſible, the biſhop of Glaſgow and Sir William Douglas voluntarily ſurrendered themſelves priſoners to the Engliſh. Edward, however, aſcribed this voluntary ſurrender, not to any honourable motive, but to treachery. He aſſerted, that Wiſheart repaired to the caſtle of Roxburgh under pretence of yielding himſelf up, but with the concealed purpoſe of forming a conſpiracy in order to betray that caſtle to the Scots; and in proof of this, Edward appealed to intercepted letters of Wiſheart. On the other hand, Wallace, aſcribing the biſhop's conduct to traiterous puſillanimity, plundered his houſe, and carried off his family captives.

Immediately after the defection of the barons at Irvine, Wallace with his band of determined followers attacked the rear of the Engliſh army, and plundered their baggage; but was obliged to retire, with the loſs of 1000 men. He then found himſelf deſerted by almoſt all the men of eminence and property. His army, however, increaſed conſiderably by the acceſſion of numbers of inferior rank, and he again began to act on the offenſive. While he employed himſelf in beſieging the caſtle of Dundee, he was informed that the Engliſh army approached Stirling. Wallace, having charged the citizens of Dundee, under the pain of death, to continue the blockade of the caſtle, haſtened with all his troops to guard the important paſſage of the Forth; and encamped behind a riſing ground in the neighbourhood of the abbey of Cambuſkenneth. Brian Fitz-Allan had been appointed governor of Scotland by Edward; but Warenne, who waited the arrival of his ſucceſſor, remained with the army. Imagining that Wallace might be induced by fair means to lay down his arms, he diſpatched two friars to the Scottiſh camp, with terms of capitulation. "Return," ſaid Wallace, "and tell your maſters, that we came not here to treat but to aſſert our right, and to ſet Scotland free. Let them advance, they will find us prepared." The Engliſh, provoked at this anſwer, demanded impatiently to be led on to battle. Sir Richard Lundin remonſtrated againſt the abſurdity of making a numerous army paſs by a long narrow bridge in preſence of the enemy. He told them, that the Scots would attack them before they could form on the plain to the north of the bridge, and thus certainly defeat them: at the ſame time he offered to ſhow them a ford, which having croſſed with 500 horſe, and a choſen detachment of infantry, he propoſed to come round upon the rear of the enemy, and by this diverſion facilitate the operations of the main body. But this propoſal being rejected, the Engliſh army began to paſs over; which was no ſooner perceived by Wallace, than he ruſhed down upon them, and broke them in a moment. Creſſingham the treaſurer was killed, and many thouſands were ſlain on the field, or drowned in their flight. The loſs of the Scots would have been inconſiderable, had it not been for that of Sir Andrew Moray, the intimate friend and companion of Wallace, who was mortally wounded in the engagement. The Scots are ſaid to have treated the dead body of Creſſingham with the utmoſt indignity; to have ſlead him, and cut his ſkin into pieces, which they divided among themſelves; while others tell us, they uſed it for making girths, and ſaddles.

Scotland.

107 Gives the Engliſh a great defeat near Stirling.

The victory at Stirling was followed by the ſurrender of Dundee caſtle, and other places of ſtrength in Scotland; at the ſame time the Scots took poſſeſſion of Berwick, which the Engliſh had evacuated. But as a famine now took place in Scotland by the bad ſeaſons and miſeries of war, Wallace marched with his whole army into England, that he might in ſome meaſure relieve the neceſſities of his countrymen by plundering the enemy. This expedition laſted three weeks, during which time the whole tract of country from Cockermouth and Carliſle to the gates of Newcaſtle was laid waſte with all the fury of revenge and rapacity; though Wallace endeavoured as far as poſſible, to repreſs the licentiouſneſs of his ſoldiers.

In 1298, Wallace aſſumed the title of "Governor of Scotland, in name of king John, and by conſent of the Scottiſh nation;" but in what manner this office was obtained, is now in a great meaſure unknown. In a parliament which he convoked at Perth, he was confirmed in his authority; and under this title he conferred the conſtabulary of Dundee on Alexander ſurnamed *Skrimgeour* and his heirs, on account of his faithful aid in bearing the royal ſtandard of Scotland. This

grant

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grant is ſaid to have been made with the conſent and approbation of the Scottiſh nobility, 29th March 1298. From this period, however, we may date the very great jealouſy which took place between Wallace and the nobles who pretended to be of his party. His elevation wounded their pride; his great ſervices reproached their inactivity in the public cauſe; and thus the counſels of Scotland were perplexed with diſtruſt and envy, when almoſt its very exiſtence depended on unanimity.

108 Jealouſy between Wallace and the barons.

In June 1298, Edward, who had all this time been in Flanders, returned to England, and ſummoned the Scottiſh barons, under pain of rebellion, to attend him in parliament; and, on their diſobeying his ſummons, he advanced with his army towards Scotland. His main force, commanded by himſelf, aſſembled at Berwick; but a body of troops, under the earl of Pembroke, having landed in the north of Fife, were defeated with great loſs by Wallace, on the 12th of June. The ſame month Edward invaded Scotland by the way of the eaſtern borders. No place reſiſted him except the caſtle of Dirleton. After a reſolute defence, it ſurrendered to Anthony Beck, biſhop of Durham.

109 Scotland again invaded by Edward.

Meanwhile the Scots were aſſembling all their ſtrength in the interior part of the country. Few barons of eminence repaired to the national ſtandard. They whoſe names are recorded, were John Comyn of Badenoch, the younger; Sir John Stewart of Bonkill, brother to *The Steward;* Sir John Graham of Abercorn; and Macduff, the grand-uncle of the young earl of Fife — Robert Bruce again acceded to the Scottiſh party; and with his followers guarded the important caſtle of Air, which kept the communication open with Galloway, Argyleſhire, and the iſles.

The aim of Edward was to penetrate into the weſt, and there to terminate the war. He appointed a fleet, with proviſions, to proceed to the frith of Clyde, and await his arrival in thoſe parts. This precaution was abſolutely neceſſary for the ſubſiſtence of his numerous army in a country impoveriſhed and waſte.

Waiting for accounts of the arrival of his fleet, he eſtabliſhed his head-quarters at Templeliſton, between Edinburgh and Linlithgow.

A dangerous inſurrection aroſe in his camp. He had beſtowed a donative of wine among his ſoldiers; they became intoxicated; a national quarrel enſued.— In this tumult the Welch ſlew 18 Engliſh eccleſiaſtics. The Engliſh horſemen rode in among the Welch, and revenged this outrage with great ſlaughter. The Welch in diſguſt ſeparated themſelves from the army. It was reported to Edward, that they had mutinied, and gone over to the Scots: "I care not," ſaid Edward, diſſembling the danger; "let my enemies go and join my enemies; I truſt that in one day I ſhall chaſtiſe them all."

Edward was now placed in moſt critical circumſtances. As the fleet with proviſions had been detained by contrary winds, he could not venture to advance, neither could he ſubſiſt any longer in his preſent quarters. To retreat would have ſullied the glory of his arms, and expoſed him to the obloquy and murmurs of a diſcontented people. Yet he ſubmitted to this hard neceſſity. Abandoning every proſpect of ambition and revenge, he commanded his army to return to the eaſtern borders. At that moment intelligence arrived that the Scots were advanced to Falkirk.

Edward inſtantly marched againſt them. His army lay that night in the fields. While Edward ſlept on the ground, his war-horſe ſtruck him and broke two of his ribs. The alarm aroſe, that the king was wounded. They who knew not the cauſe, repeated the cry, "The king is wounded; there is treaſon in the camp; the enemy is upon us." Edward mounted on horſeback, and by his preſence diſpelled the panic. With a fortitude of ſpirit ſuperior to pain, he led on his troops. At break of day, the Scottiſh army was deſcried, forming on a ſtony field at the ſide of a ſmall eminence in the neighbourhood of Falkirk.

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110 The battle of Falkirk.

Wallace ranged his infantry in four bodies of a circular form. The archers, commanded by Sir John Stewart, were placed in the intervals. The horſe, amounting to no more than a thouſand, were at ſome diſtance in the rear. On the front of the Scots lay a moraſs. Having drawn up his troops in this order, Wallace pleaſantly ſaid, "Now I have brought you to the ring, dance according to your ſkill."

Edward placed his chief confidence in the numerous and formidable body of horſemen whom he had ſelected for the Scottiſh expedition. Theſe he ranged in three lines. The firſt was led by Bigot earl Marſhal, and the earls of Hereford and Lincoln; the ſecond by the biſhop of Durham, having under him Sir Ralph Baſſet of Drayton; the third, intended for a reſerve, was led by the king himſelf. No mention is made of the diſpoſition of his infantry: it is probable that they were drawn up behind, to ſupport the cavalry, and to annoy the Scots with their arrows and other miſſile weapons.

Bigot, at the head of the firſt line, ruſhed on to the charge. He was checked by the moraſs, which in his impetuoſity he had overlooked. This obliged him to incline to the ſolid ground on his left, towards the right flank of the Scottiſh army. The biſhop of Durham, who led the ſecond line, inclined to the right, turned the moraſs, and advanced towards the left flank of the Scottiſh army. He propoſed to halt till the reſerve ſhould advance. "To mais, biſhop," cried Baſſet, and inſtantly charged. The ſhock of the Engliſh cavalry on each ſide was violent, and gallantly withſtood by the Scottiſh infantry; but the Scottiſh cavalry, diſmayed at the number and force of the Engliſh men-at-arms, immediately quitted the field. Stewart, while giving orders to his archers, was thrown from his horſe and ſlain. His archers crowded round his body and periſhed with him. Often did the Engliſh ſtrive to force the Scottiſh circle. "They could not penetrate into that [illegible] wood of ſpears," as one of their hiſtorians ſpeaks. By repeated charges, the cavalry at laſt were brought to [illegible] the ground. The Engliſh infantry meanwhile galled the Scots with ſhowers of ſtones and arrows. Macduff and Sir John Graham fell. At length the Scots were broken by the numbers and weight of the Engliſh cavalry, and the rout became univerſal.

111

The number of the Scots ſlain in this battle muſt have been very great. As is commonly the caſe, it is exaggerated by the hiſtorians of the victors, and reduced too low by the hiſtorians of the vanquiſhed.

On the ſide of the Engliſh victory was inconſiderable. The only perſons of note who fell were Brian le Jay, maſter of the Engliſh Templars, and the prior of Temple [illegible]

Scotland. plichen in Scotland, a knight of another order of religious ſoldiery (E).

The Scots in their retreat burnt the town and caſtle of Stirling. Edward repaired the caſtle, and made it a place of arms. He then marched to the weſt. At his approach, Bruce burnt the caſtle of Ayr, and retired. Edward would have purſued him into Carrick; but the want of proviſions ſtopped his further progreſs. He turned into Annandale, took Bruce's caſtle of Lochmaben, and then departed out of Scotland by the weſtern borders.

Here may be remarked the fatal precipitancy of the Scots. If they had ſtudied to protract the campaign, inſtead of hazarding a general action at Falkirk, they would have foiled the whole power of Edward, and reduced him to the neceſſity of an inglorious retreat.

112 Abject condition of John Baliol.

In 1299 Edward thought proper to releaſe John Baliol the unfortunate king of Scotland, whom he had kept cloſe priſoner ever ſince the year 1296. Before this time Baliol had uſed the moſt diſgraceful methods to recover his liberty. He had ſolemnly declared, that "he would never have any intercourſe with the Scots; that he had found them a falſe and treacherous people; and that he had reaſon to ſuſpect them of an intention to poiſon him." However, notwithſtanding all his proteſtations, Edward ſtill detained him in captivity; but at laſt releaſed him at the mediation of the pope, though after a ſingular form: He ordered the governor of Dover to convey him to the French coaſt, and there to deliver him to the papal nuncio, "with full power to the pope to diſpoſe of Baliol and his Engliſh eſtate." In conſequence of which he was conveyed to Witſand, delivered to the nuncio in preſence of a notary and witneſſes, and a receipt taken for his perſon. Notwithſtanding this abject ſtate, however, the Scots continued to own him for their king, and to aſſert their national independency. Tho' the misfortune at Falkirk had deprived them of a very conſiderable extent of territory, they were ſtill in poſſeſſion of the whole country beyond the Forth, as well as the county of Galloway. By general conſent William Lamberton biſhop of St Andrew's, Robert Bruce earl of Carrick, and John Cummin the younger, were choſen guardians of Scotland in name of Baliol. Wallace at this time was reduced to the condition of a private man; nor had he any longer the command of the Scots armies, nor any ſhare in their councils.—The new guardians undertook to reduce the caſtle of Stirling, and Edward prepared to defend it. The Scots poſted themſelves at the Torwood, and choſe their ground judiciouſly, ſo that Edward could ſcarce have raiſed the ſiege without diſlodging them; which finding it impoſſible for him to do, he returned home in diſguſt. Next year he invaded Scotland on the weſt ſide, waſted Annandale, and reduced Galloway; but the Scots being now taught by experience to avoid a general action, choſe their poſts with ſuch ſkill, that Edward

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113 Edward obliged to retire.

ward

(E) "This account of the action at Falkirk, extracted from Lord Hailes's *Annals*, is drawn, his Lordſhip informs us, from the teſtimony of the Engliſh hiſtorians. "They have done juſtice (he obſerves) to the courage and ſteadineſs of their enemies; while our hiſtorians repreſented their own countrymen as occupied in frivolous unmeaning conteſts, and, from treachery or reſentment, abandoning the public cauſe in the day of trial.

"It would be tedious and unprofitable to recite all that has been ſaid on this ſubject by our own writers from Fordun to Abercrombie. How Wallace, Stewart, and Comyn, quarrelled on the punctilio of leading the van of an army which ſtood on the defenſive: How Stewart compared Wallace to 'an owl with borrowed feathers': How the Scottiſh commanders, buſied in this frivolous altercation, had no leiſure to form their army: How Comyn traiterouſly withdrew with 10,000 men: How Wallace, from reſentment, followed his example: How by ſuch diſaſtrous incidents, the Scottiſh army was enfeebled, and Stewart and his party abandoned to deſtruction. Our hiſtories abound in traſh of this kind: There is ſcarcely one of our writers who has not produced an invective againſt Comyn, or an apology for Wallace, or a lamentation over the deſerted Stewart. What diſſenſions may have prevailed among the Scottiſh commanders, it is impoſſible to know. It appears not to me that their diſſenſions had any influence on their conduct in the day of battle. The truth ſeems to be this: The Engliſh cavalry greatly exceeded the Scottiſh in numbers, were infinitely better equipped and more adroit: the Scottiſh cavalry were intimidated, and fled. Had they remained on the field, they might have preſerved their honour; but they never could have turned the chance of that day. It was natural, however, for ſuch of the infantry as ſurvived the engagement, to impute their diſaſter to the defection of the cavalry. National pride would aſcribe their flight to treachery rather than to puſillanimity. It is not improbable that Comyn commanded the cavalry: hence a report may have been ſpread, that Comyn betrayed his country; this report has been embelliſhed by each ſucceſſive relator. When men are ſeized with a panic, their commander *muſt* from neceſſity, or *will* from prudence, accompany them in their flight. Earl Warrenne fled with his army from Stirling to Berwick; yet Edward I. did not puniſh him as a traitor or a coward.

"The tale of Comyn's treachery, and Wallace's ill-timed reſentment, may have gained credit, becauſe it is a pretty tale, and not improbable in itſelf: but it amazes me that the ſtory of the *congreſs* of Bruce and Wallace after the battle of Falkirk ſhould have gained credit. I lay aſide the full evidence which we now poſſeſs, 'that Bruce was not, at that time, of the Engliſh party, nor preſent at the battle.' For it muſt be admitted, that our hiſtorians knew nothing of thoſe circumſtances which demonſtrate the impoſſibility of the *congreſs*. But the wonder is, that men of ſound judgment ſhould not have ſeen the abſurdity of a long converſation between the commander of a flying army, and one of the leaders of a victorious army. When Fordun told the ſtory, he placed a 'narrow but inacceſſible glen' between the ſpeakers. Later hiſtorians have ſubſtituted the river Carron in the place of the inacceſſible glen, and they make Bruce and Wallace talk acroſs the river like two young declaimers from the pulpits in a ſchool of rhetoric."

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ward could not penetrate farther; and the same year a truce was concluded with the Scots, to continue till Whitsunday 1301.

114 The crown of Scotland claimed by Pope Boniface VIII.

This year a new competitor appeared for the crown of Scotland. Boniface VIII. in a bull directed to Edward, averred, that Scotland belonged anciently, and did still belong, to the holy see; and supported his extravagant claim by some strange authorities; such as, that Scotland had been miraculously converted by the relics of St Andrew: after which he proceeded to show the futility of Edward's pretensions, and that Scotland never had any feudal dependence on England. He required Edward to set at liberty all the Scottish ecclesiastics, particularly Wisheart bishop of Glasgow, and to remove his officers from the patrimony of the church: "But (added he) should you have any pretentions to the whole, or any part of Scotland, send your proctors to me within six months; I will hear and determine according to justice; I take the cause under my own peculiar cognizance."

115 His pretensions answered by Edward and his parliament.

This interposition of the pope had probably been procured by Scottish emissaries at the court of Rome; but, however ridiculous his pretensions might be, they afforded matter of very serious consideration to Edward. After spending a whole winter in deliberations, Edward and his parliament made separate answers to the pope. The answer of the parliament was to the following purpose: All England knows, that ever since the first establishment of this kingdom, our kings have been liege-lords of Scotland. At no time has the kingdom of Scotland belonged to the church. In temporals, the kings of England are not amenable to the see of Rome. We have with one voice resolved, that, as to temporals, the king of England is independent of Rome; that he shall not suffer his independency to be questioned; and therefore, that he shall not send commissioners to Rome. Such is, and such, we trust in God, ever will be, our opinion. We do not, we cannot, we must not, permit our king to follow measures subversive of that government which we have sworn to maintain, and which we will maintain."

116 A short truce concluded with Scotland.

The king entered into a more full refutation of the pope's arguments; and having, as he thought, answered them sufficiently, he marched again into Scotland: but, by the mediation of France, another truce was concluded, to last till St Andrew's day 1302.

117 Three bodies of the English defeated in one day.

After the expiration of the truce, Edward sent an army into Scotland, under the command of John de Segrave. This general divided his troops into three bodies; but, keeping them so far distant that they could not support each other, they were all engaged and defeated in one day by the Scots, near Roslin (see Roslin). This, however, was the last successful exploit of the Scots at this period. The pope deserted them; and the king of France concluded a peace with England, in which all mention of the Scots was industriously avoided; so that they were left alone to bear the whole weight of Edward's resentment, who now invaded their country in person with a mighty army. He met with no resistance in his progress, except from the castle of Brechin, which was commanded by Thomas Maul, a brave and experienced officer. He held out for 20 days against the whole power of the English army; but at last, being mortally wounded, the place capitulated.

118 Scotland invaded by Edward in person with a vast army.

From thence he proceeded northward, according to some historians, as far as Caithness. He then returned towards the south, and wintered in Dunfermline. In that place there was an abbey of the Benedictine order, a building so spacious, that, according to an English historian, three sovereign princes with all their retinue might have been lodged conveniently within its precincts. Here the Scottish nobles sometimes held their assemblies. The English soldiers utterly demolished this magnificent fabric.

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The only fortress that remained in the possession of the Scots was the castle of Stirling, where Sir William Oliphant commanded. To protect this single place of refuge, Comyn assembled all his forces. He posted his army on the south bank of the river, in the neighbourhood of Stirling, there to make the last stand for the national liberty. The Scots fondly imagined, that Edward would attempt to force the passage, as the impetuous Cressingham had attempted in circumstances not dissimilar. But the prudence of Edward frustrated their expectations. Having discovered a ford at some distance, he crossed the river at the head of his whole cavalry. The Scots gave way, and dispersed themselves.

119 The Scots army routed.

120 Capitulation with Edward.

All resources but their own courage had long failed them; that last resource failed them now, and they hastened to conciliate the favour of the conqueror. Previous to this, Bruce had surrendered himself to John de St John, the English warden. Comyn and his followers now submitted to Edward. They stipulated for their lives, liberties, and estates: reserving always to Edward the power of inflicting pecuniary mulcts on them as he should see fit.

From the general conditions of this capitulation, the following persons were excepted: Wisheart bishop of Glasgow, the Steward, Sir John Soulis, David de Graham, Alexander de Lindesay, Simon Fraser, Thomas Bois, and Wallace. With respect to them, it was provided, that the bishop of Glasgow, the Steward, and Soulis, should remain in exile for two years, and should not pass to the north of Trent; that Graham and Lindesay should be banished from Scotland for six months; that Fraser and Bois should be banished for three years from all the dominions of Edward, and should not be permitted, during that space, to repair to the territories of France. "As for William Wallace, it is agreed, that he shall render himself up at the will and mercy of our sovereign lord the king, if it shall seem good to him." These were all the conditions that the Scottish nation stipulated for the man who had vanquished the English at Stirling, who had expelled them from Scotland, and who had once set his country free!

Amid this wreck of the national liberties, Wallace scorned submission. He lived a free man: a free man he resolved to die. Fraser, who had too oft complied with the times, now caught the same heroic sentiments. But their endeavours to rouse their countrymen were in vain. The season of resistance was past. Wallace perceived that there remained no more hope; and sought out a place of concealment, where, eluding the vengeance of Edward, he might silently lament over his fallen country.

Edward assembled at St Andrew's what is called a

parliament

Scotland. *parte rest.* Wallace, Fraſer, and the garriſon of Stirling, were ſummoned to appear: They appeared not, and ſentence of outlawry was pronounced againſt them.

121 The caſtle of Stirling reduced, and Scotland ſubdued.

Edward now prepared to beſiege the caſtle of Stirling; and, foreſeeing that the reduction of this place would be attended with conſiderable difficulty, he ſtripped the abbey of St Andrew's of the lead which covered it, in order to employ the metal in bullets for his battering machines. Oliphant was ſolemnly ſummoned to ſurrender; but in vain. Edward drew out all his artillery, and battered the walls with ſtones of 200 pounds weight. The beſieged, however, defended themſelves with obſtinacy, and killed a great number of the Engliſh: but at laſt they were obliged to ſurrender: and Edward, looking upon the conqueſt of Scotland as now complete, ſet out for York, and from thence to Lincoln.

Though Edward had thus met with all the ſucceſs he could deſire in his expeditions againſt the Scots, he could not but perceive that his dominion over them muſt be very precarious, as long as he held them in the ſubjection of a conquered people. He reſolved therefore once more to renew his attempts for an union of the two kingdoms. He began with taking into favour the biſhop of Glaſgow, Robert Bruce, and John Mowbray, who, next to Bruce and the Cummings, was amongſt the greateſt of the Scottiſh nobility. To them he recommended the ſettling the affairs of their country, but in ſuch a manner as to leave it in his power to effect the propoſed union with England. This ſcheme, however, was by no means agreeable to Bruce; who had now no other competitor for the crown but Cumming, who was in a great meaſure incapable of oppoſing his deſigns: neither indeed could it ever be made agreeable to the bulk of the nation; and therefore came to nothing at laſt. Scotland, however, was ſubdued. Its inhabitants had renounced every idea of aſſerting their liberty, and only ſtrove to make their court to the conqueror. Wallace alone remained an exception. Edward, who had received into favour thoſe who had proved traitors over and over again, ſhowed a mean revenge againſt the only man who diſcovered a ſteady and honourable ſpirit, and whoſe friendſhip ſeemed worth the courting. Ralph de Haliburton, a priſoner, offered his aſſiſtance for diſcovering Wallace; and for this purpoſe he was granted a temporary liberty: but what he did in this very diſhonourable employment is unknown. Certain it is that Wallace was diſcovered, and betrayed into the hands of the Engliſh, by Sir John Menteith, as is commonly ſuppoſed; who is alſo ſaid to have been the intimate friend of Wallace, though without any juſt foundation. Be this as it will, however, this celebrated and heroic patriot was arraigned at Weſtminſter as a traitor to Edward, and as having burnt villages, ſtormed caſtles, and ſlaughtered many ſubjects of England. Wallace denied his ever having been a traitor, and indeed with truth; for he had always been the avowed enemy of Edward, and had not at any time owned allegiance to him. But whatever his defences might have been, they were of no avail with a judge who had reſolved on his deſtruction. Wallace was condemned to die a traitor's death, and the ſentence was executed with the utmoſt rigour! In his laſt moments he aſſerted that independency which a degenerate nation had renounced. His head was placed on a pinnacle at London, and his mangled limbs were diſtributed over the kingdom.

122 Edward attempts an union between the two kingdoms in vain.

123 Wallace betrayed, and executed.

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After the death of Wallace, Edward thought of nothing but ſettling the affairs of Scotland as a conquered country; however, he took care to preſerve the ancient forms as far as was conſiſtent with the dependent ſtate of the nation. It has been ſaid, indeed, that Edward abrogated all the Scottiſh laws and cuſtoms, and endeavoured to ſubſtitute the Engliſh in their ſtead; but this is denied by others. Lord Hailes gives us at length the record with reſpect to theſe laws, in the following words. "And, with reſpect to the laws and uſages of the government of Scotland, it is ordained, that the *cuſtom of the Scots and the Brets* ſhall for the future be prohibited, and be no longer practiſed. It is alſo ordained, that the king's lieutenant ſhall forthwith aſſemble the good people of Scotland: and that, at ſuch aſſembly, ſhall be read over the ſtatutes made by David king of Scots, and alſo the additions and amendments which have been made by other kings; and that the lieutenant, with the aſſiſtance which he ſhall then have, as well of Engliſhmen as of Scots, ſhall amend ſuch of theſe ſtatutes and uſages as are plainly againſt the laws of God and reaſon, as they beſt may in ſo ſhort a ſpace, and in ſo far as they can without conſulting the king; and as to matters which they cannot undertake to correct of themſelves, that they be put in writing, and laid before the king by the lieutenant, and any number of commiſſioners, with parliamentary powers, whom the Scots ſhall think fit to chooſe. That they ſhall meet with commiſſioners appointed by the king, and finally determine as to the premiſſes."

124 Edward's precautions for ſettling the Scots affairs.

This is the record by which it is generally ſuppoſed that the law of Scotland was abrogated. But Lord Hailes is of opinion, that *the uſage of the Scots and Brets* here mentioned was ſomething different from the common law of the land. "We know (ſays he) from our ſtatute book, that the people of Galloway had certain uſages peculiar to themſelves; *Stat. Alex.* II. c. 2. One was, that cauſes were tried among them without juries [*Quon. Attach.* c. 72. 73. placed in ſome ancient MSS. among LL. David I. c. 15.], and this may probably have been the uſage which Edward aboliſhed. The people of Galloway were ſometimes diſtinguiſhed by the name of *Scots*: thus the *wild Scot of Galloway* is an expreſſion to be found in ancient inſtruments, and is proverbial even in our own days. *The uſage of the Brets*, I take to be what relates to the judge called *brithibh*, or *brehon*; in Ireland, *brehan*; and conſequently, that the thing here aboliſhed was the commutation of puniſhments by exacting a pecuniary mulct."

125 Did not abrogate the ancient laws.

126 Indemnity granted to the Scots.

An indemnity was now granted to the Scots upon certain conditions. Various fines were impoſed, from one to five years rent of the eſtates of the delinquents. One year's rent was to be paid by the clergy, excluding the biſhop of Glaſgow; two by thoſe who were more early in their ſubmiſſions than Comyn; three by Comyn and his aſſociates, and by the biſhop of Glaſgow; four years rent was to be paid by William de Baliol and John Wiſheart; and five by Ingelram de Umfraville, becauſe they had ſtood out longer. Three years rent was alſo paid by the vaſſals of Baliol, Wiſheart, and Umfraville. Theſe fines were to be paid in moieties. The perſon taxed was to pay half his income annually: and thus Umfraville, taxed in five years rent, was allowed

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lowed ten years to discharge the fine. This was an express reservation to Edward of all the royal demesnes which Baliol might have alienated. There was also an exception for those who were already in custody, and those who had not yet submitted.

127 Overthrow of the English government.

Thus, after a long and obstinate contest, was Scotland wholly reduced under the dominion of Edward.—Within *four months* that system was overthrown, which the incessant labour of *fifteen years* had established by craft, dissimulation, and violence, with a waste of treasure, and the effusion of much blood. The causes of this event are related as follows. Derverguill of Galloway had a son, John Baliol, and a daughter named Marjory. John Comyn was the son of Marjory, and, setting Baliol aside, was heir to the pretensions of Derverguill. He had for many years maintained the contest against Edward; but at last laid down his arms, and swore fealty to the conqueror; and as Baliol had repeatedly renounced all pretensions to the crown of Scotland, Comyn might now be considered as the rightful heir. His rival in power and pretensions was Bruce earl of Carrick. This young nobleman's grandfather, *the competitor*, had patiently acquiesced in the award of Edward. His father, yielding to the times, had served under the English banners. But young Bruce had more ambition, and a more restless spirit. In his earlier years he acted upon no regular plan. By turns the partisan of Edward and the vicegerent of Baliol, he seems to have forgotten or stifled his pretensions to the crown. But his character developed itself by degrees, and in maturer age became firm and consistent. According to the traditionary report, Bruce made the following proposal to Comyn: "Support my title to the crown and I will give you my estate; or give me your estate, and I will support your's." The conditions were properly drawn out and signed by both parties; but Comyn, either through fear or treachery, revealed the whole to Edward. On this the king showed Bruce the letters of his accuser, and questioned him very hard;

128 Edward's designs against the family of Bruce.

but the latter found means to pacify him by mild and judicious answers. Notwithstanding this, however, Edward still suspected him, though he dissembled his sentiments, until he should get the brothers of Bruce into his power, and then destroy all the family at once. The king having drank freely one evening, informed some of his lords that he had resolved to put Bruce to death next day. The earl of Gloucester, hearing this resolution, sent a messenger to Bruce, with twelve pence and a pair of spurs, as if he had meant to restore what he had borrowed. Bruce understood the meaning of his message, and prepared for flight. The ground was covered with snow, which would have discovered his flight;

129 Robert Bruce makes his escape,

but, it is said, that Bruce ordered his farrier to invert the shoes of his horses, and immediately set out for Scotland in company with his secretary and groom. In his way he observed a foot-passenger whose behaviour seemed to be suspicious, and whom he soon discovered to be the bearer of letters from Comyn to the English monarch, urging the death or immediate imprisonment of Bruce. The latter, filled with resentment, immediately beheaded the messenger, and set forward to his castle of Lochmaben, where he arrived the seventh day after his departure from London. Soon after this he repaired to Dumfries, where Comyn happened at that time to reside. Bruce requested an interview with him in the convent of the Minorites, where he reproached him with his treachery. Comyn gave him the lie, and Bruce instantly stabbed him; after which he hastened out of the convent, and called "To horse." His attendants, Lindsay and Kirkpatrick, perceiving him pale, and in extreme agitation, inquired how it was with him? "Ill (replied Bruce); I doubt I have slain Comyn." "You doubt!" cried Kirkpatrick; on saying which, he rushed into the place where Comyn lay, and instantly dispatched him. Sir Robert Comyn, a relation, attempted to defend his kinsman, and shared his fate. Bruce had now gone so far, that it was in vain to think of retracting; and therefore set himself in opposition to Edward in good earnest. The justiciaries were then holding their court at Dumfries; who hearing what had happened, imagined their own lives to be in danger, and barricaded the doors. Bruce ordered the house to be set on fire: upon which they surrendered; and Bruce granted them leave to depart out of Scotland without molestation.

Scotland.

130 And by John Comyn.

131 Opinion of Lord Hailes concerning this event.

The above account of this catastrophe is taken from the Scots historians; those of England differ in many particulars. Lord Hailes supposes both to be wrong, and that the true circumstances of the quarrel are unknown. "My opinion (says he) is, that Bruce, when he met Comyn at Dumfries, had no intention of embruing his hands in his blood, nor any immediate purpose of asserting his right to the crown of Scotland; that the slaughter of Comyn was occasioned by a hasty quarrel between two proud-spirited rivals; and that Bruce, from necessity and despair, did then assert his pretensions to the crown."

The death of Comyn affected the Scots variously, according to their different views and interests. The relations of the deceased viewed it as a cruel assassination, and joined with Edward in schemes of revenge. Some who wished well to the peace of their country, thought that it was better to submit quietly to the government of the English, than to attempt a revolution, which could not be effected without much danger and bloodshed; but, on the other hand, the friends of Bruce now saw the necessity they were under of proceeding to the coronation of the new king without loss of time. The

132 Robert crowned king of Scotland by a woman.

ceremony was therefore performed at Scone on the 25th of March 1306, in presence of two earls, the bishops of St Andrew's and Glasgow, the abbot of Scone, John de Athol, and John de Menteith. It had been customary, since the days of Macbeth, for one of the family of Fife to put the crown on the king's head; and Bruce feared the prepossession of the Scots in favour of this circumstance so strong, that he was obliged to seek for an expedient to satisfy them. Macduff the earl of Fife was at that time in England, where he had married a near relation of Edward. His sister was wife to the earl of Buchan, one of the heads of the family of Comyn, and consequently the determined enemy of Robert. By an uncommon effort of female patriotism, she postponed all private quarrel to the good of her country, and in her brother's absence repaired, with all his warlike accoutrements, to Bruce, to whom she delivered them up, and placed the crown upon his head. This crown is said to have been made by one Cuthbert an Englishman, who narrowly escaped being punished for it by Edward.

The king of England received intelligence of all these

proceedings with aſtoniſhment; and without delay ſent a body of troops under the command of Aymer de Valence earl of Pembroke, to ſuppreſs the rebellion. Bruce omitted nothing for his defence. He had always been conſidered by his countrymen as a promiſing accompliſhed young nobleman, but firmly attached to Edward's perſon and government; for which reaſon he had not been truſted by thoſe independent patriots who joined Wallace. But their confidence was now gained by his rendering himſelf ſo obnoxious to Edward, that no poſſibility of a reconciliation was left; and he ſoon ſaw himſelf at the head of a ſmall army. With theſe, who conſiſted of raw and unexperienced ſoldiers, Bruce formed a camp at Methven near Perth, which laſt was the head-quarters of the enemy; but knowing the diſadvantage under which he laboured from the inexperience of his men, he reſolved to act upon the defenſive. The Engliſh general at laſt ſent Bruce a challenge to fight him, which was accepted; but the day before the battle was to have been fought by agreement, the Scots were attacked by ſurpriſe, and totally defeated. Bruce behaved with the greateſt valour, and had three horſes killed under him. Being known by the ſlaughter which he made, John Mowbray, a man of great courage and reſolution, ruſhed upon him, and catching hold of his horſe's bridle, cried out, "I have hold of the new-made king!" but he was delivered by Chriſtopher Seaton. Some Scottiſh hiſtorians have aſſerted that on this occaſion all the priſoners of note were put to death; but others inform us, that though Edward did ſend orders to that purpoſe, the Engliſh general pardoned all thoſe who were willing to ſwear fealty to his maſter: however, it is certain, that after the battle of Methven, many priſoners were hanged and quartered.

133 Is defeated at Methven.

134 Is diſtreſſed after this defeat.

This diſaſter almoſt gave the finiſhing ſtroke to the affairs of Bruce. He now found himſelf deſerted by a great part of his army. The Engliſh had taken priſoners great numbers of women whoſe huſbands followed Bruce; and all thoſe were now ordered, on pain of death, to accompany their huſbands. Thus was Bruce burdened with a number of uſeleſs mouths, and found it hard to ſubſiſt. The conſequence was, that moſt of his men departed with their families, ſo that in a few days his army dwindled down to 500. With theſe he retreated to Aberdeen, where he was met by his brother Sir Neil, his wife, and a number of other ladies, all of whom offered to follow his fortune through every difficulty. But, however heroic this behaviour might be, it put Bruce to ſome inconvenience, as he could ſcarce procure ſubſiſtence; and therefore he perſuaded the ladies to retire to his caſtle of Kildrommey, under the protection of Sir Neil Bruce and the Earl of Athol. In the mean time the deſertion among Bruce's troops continued, ſo that now he had with him no more than 200 men; and as winter was coming on, he reſolved to go into Argyleſhire, where Sir Neil Campbell's eſtate lay, who had gone before to prepare for his reception. In his way thither he encountered incredible difficulties; and ſome of his followers being cut off at a place called *Dalry*, the reſt were ſo diſheartened, that they all forſook him, excepting Sir Gilbert Hay, Sir James (ſometimes called Lord) Douglas, and a few domeſtics. Bruce, however, kept up the ſpirits of his little party by recounting to them the adventures of princes and patriots in circumſtances ſimilar to his own. Having

135 Reaches Argyleſhire with great difficulty.

croſſed Lochlomond in a ſmall crazy boat, he was diſcovered by his truſty friend the Earl of Lenox, who had been proſcribed in England, and now lived in a kind of exile on his own eſtate. The meeting between theſe friends was very affecting, and drew tears from the eyes of all preſent. Lenox, who had heard nothing of Bruce's misfortunes, furniſhed him and his half-famiſhed attendants with plenty of proviſions: but being ſoon made ſenſible that it was impoſſible for them to live in a place where they were well known, and ſurrounded by enemies, Bruce reſolved to ſeek out ſome more ſafe habitation. For this purpoſe Sir Neil Campbell had already provided ſhipping; but our adventurers had ſcarcely ſet ſail, when they were purſued by a large ſquadron of the enemy's fleet. The bark which carried the earl of Lenox eſcaped with the utmoſt difficulty to Cantire, where Bruce was already landed: and, at their meeting, both agreed that their perſons ſhould never afterwards be ſeparated while they remained alive.

Scotland.

136 Meets with the earl of Lenox;

137 With whom he flies to Cantire.

In the mean time Edward having compromiſed ſome differences with his Engliſh ſubjects, reſumed his old project of entirely ſubduing Scotland; and his intention now appears to have been to divide the lands of ſuch as he ſuſpected of diſaffection among his Engliſh followers he ordered a proclamation to be made, that all who had any title to the honour of knighthood, either by heritage or eſtate, ſhould repair to Weſtminſter to receive all military ornaments, their horſes excepted, from his royal wardrobe. As the prince of Wales came under this denomination, he was the firſt who underwent the ceremony; which gave him a right to confer the like honour on the ſons of above 300 of the chief nobility and gentry of England. The prince then repaired at the head of this gallant train, to Edward; who received them, ſurrounded by his nobility, in the moſt ſolemn manner. The king then made a ſpeech on the treachery of the Scots, whoſe entire deſtruction he vowed. He declared his reſolution of once more heading his army in perſon; and he deſired, in caſe of his death, that his body might be carried to Scotland, and not buried till ſignal vengeance was taken on the perfidious nation. Having then ordered all preſent to join him within fifteen days, with their attendants and military equipages, he prepared for his journey into Scotland. He entered the country ſoon after Bruce's defeat at Methven. The army was divided into two bodies; one commanded by the king himſelf, the other by the prince of Wales, and, under him, by the earls of Lancaſter and Hereford, with orders to proceed northwards, and penetrate into the countries where the intereſt of Bruce was ſtrongeſt. As he paſſed along, Edward cauſed all that fell into his hands, whom he ſuſpected of favouring Bruce's party, to be immediately executed. The Biſhop of Glaſgow was the only exception to this barbarity; he was taken, but had his life ſpared on account of his function.

138 Edward's preparations for a new invaſion of Scotland.

139 Enters the country, and behaves with great cruelty.

In the mean time, as the prince of Wales continued his march northwards, Bruce's queen began to be alarmed for her own ſafety. She was adviſed to take ſanctuary at the ſhrine of St Duthac in Roſsſhire; but there ſhe was made priſoner by William earl of Roſs, who was of the Engliſh party. By Edward's order ſhe was ſent to London; her daughter, who was taken at the ſame time, being ſhut up in a religious houſe. The

140 Robert's queen and daughter taken priſoners.

directions

Scotland. directions for the entertainment of the queen are ſtill preſerved †. She was to be conveyed to the manor of Bruſſelwick; to have a waiting woman and a maid ſervant, advanced in life, ſedate, and of good converſation: a butler, two menſervants and a footboy in her chamber, ſober, not riotous, to make her bed: three greyhounds when ſhe inclines to hunt; wheaten, fiſh, and the faireſt bread in the manor. In 13[illegible], ſhe was removed to another priſon; in 1312, ſhe was removed to Windſor caſtle, 20 ſhillings per week being allowed for her maintenance. In 1314, ſhe was committed to Dunbarton caſtle, and was not ſet at liberty till the cloſe of that year.

† Fœdera, Tom. ii. p. 1013.

141 Kildrummey caſtle taken, and the garriſon maſſacred.

The only fortreſs which Bruce poſſeſſed in Scotland was the caſtle of Kildrummey: and it was ſoon beſieged by the earls of Lancaſter and Hereford. One Oſborn treacherouſly burnt the magazine; by which means the garriſon, deſtitute of proviſions, was obliged to ſurrender at diſcretion. The common ſoldiers were hanged; Sir Neil Bruce and the earl of Athol were ſent priſoners to Edward, who cauſed them to be hanged on a gallows 50 feet high, and then beheaded and burnt. The counteſs of Buchan, who had crowned King Robert, was taken priſoner; as was Lady Mary Bruce, the king's ſiſter. Some hiſtorians ſay, that Edward ordered theſe two ladies to be ſhut up in wooden cages, one to be hung over the walls of the caſtle of Roxburgh, and the other over thoſe of Berwick as public ſpectacles: but Lord Hailes only tells us that the counteſs of Buchan was put into cloſe confinement in the caſtle of Berwick (F).

142 Adventures of Robert

About this time alſo many others of Bruce's party were put to death; among whom were Sir [illegible] and Alexander Bruce, two of the king's brothers, and John Wallace, brother to the celebrated Sir William. Bruce himſelf, in the mean time, was in ſuch a deſpicable ſituation, that it was thought he never could give more diſturbance: and it was even reported that he was dead. All his misfortunes, however, could not intimidate him, or prevent his meditating a moſt ſevere revenge upon the adherents of his family. He had removed to the caſtle of Dumbarton, where he was hoſpitably received and entertained by Angus lord of Argyle; but, ſuſpecting that he was not true to him, he failed in three days to Rathlin, a ſmall iſland on the Iriſh coaſt, where he ſecured himſelf effectually from the purſuit of his enemies. It was during his ſtay in this iſland, that the report of his death was generally propagated. Notwithſtanding this, his party increaſed conſiderably; and, even when he landed on this iſland, he was attended by 300 men. However, after having lived for ſome time in this retreat, being apprehenſive that the report of his death might be generally credited among his friends in Scotland, it was reſolved to attempt the ſurpriſe of a fort held by the Engliſh under Sir John Haſtings, on the iſle of Arran. This was performed with ſucceſs by his two friends Douglas and Sir Robert Boyd, who put the greateſt part of the garriſon to the ſword. The king, hearing of their ſucceſs, paſſed over into Arran; but, not knowing where his people reſided, is ſaid to have found them out by blowing a horn. He then ſent a truſty ſervant, one Cuthbert, into his own country of Carrick; with orders, in caſe he found it well affected

143 He takes a fort on the iſle of Arran.

5 C 2 to

(F) M. Weſtminſter, p. 455. ſays, "Capitur etiam et illa impiiſſima conjuratrix de Buchan, de qua conſultus rex, ait, Quia gladio non perculſit, gladio non peribit; verum, propter illicitam conjurationem quam fecit, in domicilio lapideo et ferreo, in modum coronæ fabricato, firmiſſime obſtruatur, et apud Berwicum ſub dio ſuſpendatur, ut ſit dicta, in vita et poſt mortem, ſpeculum viatoribus, et opprobrium ſempiternum." Other Engliſh hiſtorians, copying M. Weſtminſter, have ſaid the ſame thing. We cannot, therefore, blame Abercrombie for ſaying, "She was put in a wooden cage ſhaped like a crown, and in that terrifying poſture hung out from high walls or turrets to be gazed upon and reproached by the meaneſt of the multitude." Vol. I. p. 570. Hemingford, Vol. I. p. 221. relates the ſtory in a manner ſomewhat different. He ſays, that the earl of Buchan her huſband ſought to kill her for treaſon; but that Edward reſtrained him, and ordered her to be confined in a wooden cage.

The intentions of Edward I. touching the durance of the counteſs of Buchan, will be more certainly learned from his own orders, than from the report of M. Weſtminſter. His orders run thus: "By letters under the privy-ſeal, be it commanded, that the chamberlain of Scotland, or his deputy at Berwick upon Tweed, do, in one of the turrets of the new caſtle, and in the place which he ſhall find moſt convenient, cauſe conſtruct a cage ſtrongly latticed with wood (*de fuſt*, i. e. beams of timber or palliſades), croſs-barred, and ſecured with iron, in which he ſhall put the counteſs of Buchan. And that he take care that ſhe be ſo well and ſafely guarded there, in, that in no ſort ſhe may iſſue therefrom. And that he appoint one or more women of Berwick, of Engliſh extraction, and liable to no ſuſpicion, who *ſhall with her eat and drink, and lie in the ſame chamber, and do all the offices* [illegible]. And that he do cauſe her to be ſo well and ſurely guarded in the ſame, that ſhe may not ſpeak with any one, man or woman, of the Scottiſh nation, or with any one elſe, ſaving with the women who ſhall be appointed to attend her, or with the guard who ſhall have the cuſtody of her perſon. And that the cage be ſo conſtructed, *that the ſaid counteſs may have therein a chamber and a garderobe* (camera et garderobe), nevertheleſs, that all things be ſo well and ſurely ordered, that no peril ariſe touching the right cuſtody of the ſaid counteſs. And that he to whom the charge of her is committed ſhall be reſponſible, body for body; and that he be allowed his charges." *Fœdera*, T. ii. p. 1014.

Such were the orders of Edward I. and *he* ſurely was not a man who would ſuffer his orders to be diſobeyed. Here, indeed, there is a detail concerning the cuſtody of a noble priſoner, which may [illegible] ridiculous, but which is inconſiſtent with the ſtory related by M. Weſtminſter and other hiſtorians, who have no notion of any cage but one for a perſon to be ſtripped, hung out at a window, and [illegible] to the immediate inſpection.

Scotland. to his cauſe, to light a fire on a certain point near his caſtle of Tunberry, whence it could be deſcerned in Arran. Bruce and his party perceived the ſignal, as they thought, and immediately put to ſea. Their voyage took up but little time; and as Bruce had now 400 men along with him, he reſolved immediately to act on the offenſive. His firſt exploit was to ſurpriſe his own caſtle of Tunberry, which had been given, along with Bruce's eſtate, to lord Henry Percy. Him he drove out, along with the Engliſh garriſon; but, in the mean time, he met with his ſervant Cuthbert, who gave him diſagreeable intelligence. This man had met with very little encouragement on his landing in Scotland; in conſequence of which he had not lighted the fire agreed upon as a ſignal of his ſucceſs, that which Bruce had obſerved having been kindled by accident. He alſo told him, that the Engliſh were in full poſſeſſion of the country, and adviſed his maſter to be upon his guard. Soon after this the king was joined by a lady of fortune, who brought along with her 40 warriors. By her he was firſt particularly informed of the miſerable fate of his family and relations; which, inſtead of diſheartening, animated him the more with a deſire of revenge. However, he did not immediately attempt any thing himſelf, but allowed Douglas to attempt the recovery of his eſtate of Douglas-dale, as Bruce himſelf had recovered his in Carrick. In this expedition Douglas was joined by one Thomas Dickſon, a man of conſiderable fortune, and who gave him intelligence concerning the ſtate of the country. By his advice he kept himſelf private till Palm Sunday; when he and his followers with covered armour repaired to St Bride's church, where the Engliſh were performing divine ſervice. The latter were ſurpriſed, but made a brave defence; though, being overpowered by numbers, they were at laſt obliged to yield. Douglas, without farther reſiſtance, took poſſeſſion of his own caſtle, which he found well furniſhed with arms, proviſions, and money. He deſtroyed all that he could not carry with him, and alſo the caſtle itſelf, where he knew that he muſt have been beſieged if he had kept it.

114 Arrives at the coaſt of Carrick.

115 Douglas recovers his own eſtate.

While Bruce and his friends were thus ſignalizing themſelves, and ſtruggling with the Engliſh under ſo many diſadvantages, it is natural to think that they muſt have met with many dangerous and difficult adventures. Many of theſe, indeed, are related by the Scots hiſtorians; but moſt of them have the appearance of fables, and it is now impoſſible to diſtinguiſh the true from the falſe; for which reaſon we ſhall paſs them all over in ſilence, confining ourſelves only to thoſe facts which are at once important and well authenticated.

In 1307, the earl of Pembroke advanced into the weſt of Scotland to encounter Bruce. The latter did not decline the combat; and Pembroke was defeated. Three days after this, Bruce defeated with great ſlaughter another Engliſh general named Ralph de Monthermer, and obliged him to fly to the caſtle of Air. The king laid ſiege to the caſtle for ſome time, but retired at the approach of ſuccours from England. This year the Engliſh performed nothing, except burning the monaſtery at Paiſley. Edward, however, reſolved ſtill to execute his utmoſt vengeance on the Scots, though he had long been retarded in his operations by a tedious and dangerous indiſpoſition. But now, ſuppoſing that his malady was decreaſed ſo far that he could ſafely proceed on his march, he offered up the horſe-litter, in which he had hitherto been carried, in the cathedral church of Carliſle; and, mounting himſelf on horſeback, proceeded on the way towards Solway. He was ſo weak, however, that he could advance no farther than ſix miles in four days; after which he expired in ſight of Scotland, which he had ſo often devoted to deſtruction. With his dying breath he gave orders that his body ſhould accompany his army into Scotland, and remain unburied until the country was totally ſubdued; but his ſon diſregarding this order, cauſed it to be depoſited in Weſtminſter abbey.

Scot'and.

147 Death of Edward I.

The death of ſuch an inveterate enemy to the Scottiſh name, could not fail of raiſing the ſpirits of Bruce and his party; and the inactive and timid behaviour of his ſon Edward II. contributed not a little to give them freſh courage. After having granted the guardianſhip of Scotland to his favourite Piers de Gaveſton earl of Pembroke, whom his father had lately baniſhed, he advanced to Cumnock, on the frontiers of Airſhire, and then retreated into England; conferring the office of guardian of Scotland upon John de Bretagne earl of Richmond, a fortnight after he had beſtowed it on Gaveſton. He was no ſooner gone than Bruce invaded Galloway. The inhabitants refuſing to follow his ſtandard, he laid waſte the country; but was defeated, and obliged to retire northwards by the guardian. In the north he over-ran the country without oppoſition; and ſoon began to move ſouthwards again in order to repair his late diſgrace. He was encountered by Comyn earl of Buchan with an undiſciplined body of Engliſh, whom he entirely defeated and diſperſed. But about this time he was ſeized with a grievous diſtemper, which weakened him ſo much, that no hopes were left of his recovery. In this enfeebled ſituation, he was attacked by the earl of Buchan and John Mowbray an Engliſh commander, who had aſſembled a body of troops in order to efface their late diſhonour. The armies met at Inverury in Aberdeenſhire. Bruce was too weak to ſupport himſelf, and therefore was held upon horſeback by two attendants: but he had the pleaſure of ſeeing his enemies totally defeated, and purſued with great ſlaughter for many miles; and it is reported that the agitation of his ſpirits on that day proved the means of curing him of his diſeaſe. This battle was fought on the 22d of May 1308.

148 Robert defeated in Galloway.

149 He defeats the Engliſh in his turn, and recovers from a dangerous diſeaſe.

The king of Scotland now took revenge of his enemies, after the manner of that barbarous age, by waſting the country of Buchan with fire and ſword. His ſucceſſes had ſo raiſed his character, that many of the Scots who had hitherto adhered to the Engliſh cauſe, now came over to that of Robert. Edward, the king's brother invaded Galloway, and defeated the inhabitants of that country. John de St John, an Engliſh commander, with 1500 horſemen, attempted to ſurpriſe him; but Edward having received timely information of his deſigns, ordered the infantry and meaner part of his army to entrench themſelves ſtrongly, while he himſelf, with no more than 50 horſemen, well armed, under cover of a thick miſt, attacked his enemies, and put them to flight. After this he reduced all the fortreſſes in the country, and totally expelled the Engliſh from it. About this time alſo, Douglas, when roving about the mountainous

150 Succeſſes of Edward Bruce.

146 The Engliſh twice defeated by Bruce.

Scotland.

tainous parts of Tweedale, ſurpriſed and made priſoners Thomas Randolph the king's nephew, and Alexander Stewart of Bonkhill, who had hitherto continued inimical to the intereſts of Robert. Randolph was conducted to the king, but talked to him in an haughty ſtrain; upon which his uncle put him into cloſe confinement.

151 The lord of Lorn defeated, and his caſtle taken.

The next exploit of Robert was againſt the Lord of Lorn, a diviſion of Argyleſhire. It was this nobleman who had reduced the king to ſuch ſtraits after his defeat at Methven; and he now reſolved to take ample revenge. Having entered the country, the king arrived at a narrow paſs, where the troops of Lorn lay in ambuſh. This paſs had a high mountain on the one ſide, and a precipice waſhed by the ſea on the other; but Robert having ordered Douglas to make a circuit and gain the ſummit of the mountain with part of the army he entered himſelf with the reſt. He was immediately attacked; but Douglas with his men ruſhed down the hill, and decided the victory in favour of the king; who ſoon after took the caſtle of Dunſtaffnage, the chief reſidence of this nobleman.

While Robert and his aſſociates were thus gaining the admiration of their countrymen by the exploits which they daily performed, the Engliſh were ſo unſettled and fluctuating in their counſels, that their party knew not how to act. Edward ſtill imagined that there was a poſſibility of reconciling the Scots to his government: and for this purpoſe he employed William de Lambyrton, biſhop of St Andrew's, who, after having been taken priſoner, and carried from one place of confinement to another, had at laſt made ſuch ſubmiſſions, as procured firſt his liberty, and then the confidence of Edward. This eccleſiaſtic having taken a moſt ſolemn oath of fidelity to Edward, now reſolved to ingratiate himſelf, by publiſhing againſt Robert and his adherents a ſentence of excommunication, which had been reſolved on long before. This, however, produced no effect; and the event was, that in 1309, through the mediation of the king of France, Edward conſented to a truce with the Scots. This pacific diſpoſition, however, laſted not long. The truce was ſcarcely concluded, when Edward charged the Scots with violating it, and ſummoned his barons to meet him in arms at Newcaſtle; yet, probably being doubtful of the event of the war, he empowered Robert de Umfraville, and three others, to conclude a new truce; declaring, however, that he did this at the requeſt of Philip king of France, as his deareſt father and friend, but who was in no part to be conſidered as the ally of Scotland.

152 Unſucceſsful negociations for peace,

The new negociations were ſoon interrupted. They were again renewed; and in the beginning of the year 1310 the truce was concluded, but entirely diſregarded by the Scots. The progreſs of Bruce now became very alarming. The town of Perth, a place at that time of great importance, was threatened; and to relieve it, Edward ordered a fleet to ſail up the river Tay: he alſo commanded the earl of Ulſter to aſſemble a body of troops at Dublin, and from thence to invade Scotland; his own barons were ordered to meet him in arms at Berwick. About the end of September, he entered Scotland; paſſed from Roxburgh, through the foreſt of Selkirk, to Biggar; from thence he penetrated into Renfrew; and turning back by the way of Lidaldgrow, [illegible] to Berwick, [illegible]

153 Edward invades Scotland without ſucceſs.

During this invasion, Robert [illegible] a battle with the Lord [illegible]; with [illegible] ſion underſtood [illegible] cavalry, on which the Engliſh placed their chief dependence. His army was alſo [illegible] which prevailed at this time in Scotland; [illegible] magazines and other [illegible] then unknown, the Engliſh army were greatly [illegible] in their operations, and found it impoſſible to ſubſiſt in the country.

154

The ſpirit of enterprize had now communicated itſelf to all ranks of people in Scotland. In 1311, the caſtle of Linlithgow was ſurpriſed by a poor peaſant named *William Binnock*. The Engliſh garriſon were ſecure, and kept but a ſlight guard; of which Binnock being informed, concealed eight reſolute men in a load of hay, which he had been employed to bring into the caſtle. With theſe, as ſoon as the gate was opened, he fell upon the feeble guard, and became maſter of the place; which was diſmantled by Robert, as well as all the other caſtles taken in the courſe of the war.

Edward now reſolved to invade Scotland again; and for this purpoſe ordered his army to aſſemble at Roxburgh. But Robert, not contented with defending his own country, reſolved in his turn to invade England. He accordingly entered that country, and cruelly ravaged the biſhopric of Durham. He returned loaded with ſpoil, and laid ſiege to Perth. After remaining ſix weeks before that place, he raiſed the ſiege, but returned in a few days; and having provided ſcaling ladders, approached the works with a choſen body of infantry. In a dark night he made the attack: and having waded through the ditch though the water flood to his throat, he was the ſecond man who reached the top of the walls. The town was then ſoon taken; after which it was plundered and burnt, and the fortifications levelled with the ground. This happened on the 8th of January 1312.

155 Robert invades England, and takes Berwick.

Edward was now become averſe to the war, and renewed his negociations for a truce; but they ſtill came to nothing. Robert again invaded England: [illegible] great part of the city of Durham; and even threatened to beſiege Berwick, where the king of England had, for the time, fixed his reſidence. He [illegible] the caſtles of Butel, Dumfries, and Dalſwinton, with many other fortreſſes. The caſtle of Roxburgh, a place of the utmoſt importance, next fell into his hands. The walls were ſcaled while the garriſon was revelling on the eve of Lent. They retreated into the inner [illegible] but their governor, a Frenchman, having received a mortal wound, they capitulated.

156

Randolph, the king's nephew, who had been impriſoned, as we have already obſerved, was now received into favour, and began to diſtinguiſh himſelf in the cauſe of his country. He blockaded the caſtle of Edinburgh ſo cloſely, that all communication with the neighbouring country was cut off. The place was commanded by one Leland, a knight of Gaſcony; but the garriſon ſuſpecting his fidelity, impriſoned him in a dungeon, and choſe another commander in his ſtead. One William Frank preſented himſelf to Randolph, and informed him how the walls might be ſcaled. This man in his youth had reſided in the caſtle; and [illegible]

157 Edinburgh taken by Randolph

Scotland.

an intrigue with a woman in the neighbourhood, had been accuſtomed to deſcend the wall, during the night, by means of a ladder of ropes; whence, by a ſteep and difficult path, he arrived at the foot of the rock. Randolph himſelf, with 30 men, undertook to ſcale the caſtle walls at midnight. Frank was their guide, who ſtill retained a perfect memory of the path, and who firſt aſcended the wall. But before the whole party could reach the ſummit, an alarm was given, the garriſon ran to arms, and a deſperate combat enſued. The Engliſh fought valiantly till their commander was killed; after which they threw down their arms. Leland, the former governor, was releaſed from his confinement, and entered into the Scottiſh ſervice.

In 1313, king Robert found the number of his friends increaſing with his ſucceſſes. He was now joined by the earl of Athol, who had lately obtained a grant of lands from Edward. This year, through the mediation of France, the conferences for a truce were renewed. Theſe, however, did not retard the military operations of the Scots. Cumberland was invaded and laid waſte: the miſerable inhabitants beſought Edward's protection; who commended their fidelity, and deſired them to defend themſelves. In the mean time, Robert, leaving Cumberland, paſſed over into the iſle of Man, which he totally reduced. Edward found great difficulties in raiſing the ſupplies neceſſary for carrying on the war; but at laſt overcame all theſe, and, by the beginning of the year 1314, was prepared to invade Scotland with a mighty army. In March he ordered his ſhips to be aſſembled for the invaſion; invited to his aſſiſtance Eth O'Connor, chief of the Iriſh of Connaught, and 26 other Iriſh chiefs; ſummoned them and his ſubjects in Ireland to attend his ſtandard, and gave the command of theſe auxiliaries to the earl of Ulſter. His barons were ſummoned to meet him at Berwick on the 11th of June; and 22,000 foot-ſoldiers, from the different counties of England and Wales, were required by proclamation to aſſemble at Wark.

158 Robert invades England, and reduces the iſle of Man.

159 Edward Bruce enters into an imprudent treaty with the governor of Stirling,

In the mean time, the ſucceſſes of the Scots continued. Edward Bruce had reduced the caſtles of Rutherglen and Dundee, and laid ſiege to the caſtle of Stirling. The governor of the place agreed to ſurrender, if he was not relieved before the 24th of June 1314; and to this Edward agreed, without conſulting his brother. The king was highly diſpleaſed with this raſh treaty, which interrupted his own operations, allowed the Engliſh time to aſſemble their utmoſt force, and at laſt obliged him either to raiſe the ſiege or to put all on the event of a ſingle battle. However, he reſolved to abide by the agreement, and to meet the Engliſh by the appointed day. Having appointed a general rendezvous of his forces between Falkirk and Stirling, he found their number to amount to ſomewhat more than 30,000, beſides upwards of 15,000 of an undiſciplined rabble that followed the camp. He determined to wait the Engliſh in a field which had the brook or *burn* of Bannock on the right, and Stirling on the left. His chief dread was the ſtrength and number of the Engliſh cavalry, and theſe he took every method to oppoſe. The banks of the brook were ſteep in many places, and the ground between it and Stirling was partly covered with wood. The king commanded many pits, of about a foot in breadth and two or three feet deep, to be dug in all places where cavalry could have acceſs. From the deſcription given of them by the hiſtorians of thoſe times, there ſeem to have been many rows of them, with narrow intervals. They were carefully covered with bruſhwood and ſod, ſo that they would eaſily be overlooked by a raſh and impetuous enemy. It is ſaid by ſome authors, that he alſo made uſe of caltrops, to annoy the horſes in the moſt effectual manner.

160 Which being on the deciſive engagement of the next day,

161 Diſpoſition of the Scots,

On the 23d of June, the Scots received intelligence of the approach of Edward, and prepared to decide the fate of their country. The front of their army extended from the brook called *Bannockburn* to the neighbourhood of St Ninians, pretty nearly upon the line of the preſent turnpike-road from Stirling to Kilſyth; and the ſtone in which the king is ſaid to have fixed his ſtandard is ſtill to be ſeen. Robert commanded all his ſoldiers to fight on foot. He gave the command of the centre to Douglas, and Walter the young ſteward of Scotland; his brother Edward had the command of the right wing, and Randolph of the left; the king himſelf taking charge of the reſerve, which conſiſted of the men of Argyle, Carrick, and the iſlanders. In a valley to the rear, ſaid to be to the weſtward of a riſing ground now called *Gillies-hill*, he placed the baggage, and all the uſeleſs attendants on his army.

162 A party of Engliſh cavalry defeated by Randolph.

Randolph was commanded to be vigilant in preventing the Engliſh from throwing ſuccours into the caſtle of Stirling; but 500 horſemen, commanded by Sir Robert Clifford, made a circuit by the low grounds to the eaſt, and approached the caſtle. The king, perceiving their motions, chid Randolph for his inadvertency, on which the latter haſtened to encounter that body. As he advanced, the Engliſh wheeled to attack him. Randolph drew up his men in a circular form, holding out their ſpears on every ſide. At the firſt onſet Sir William Daynecourt, an Engliſh commander of diſtinguiſhed valour, was killed; but Randolph, who had only a ſmall party with him, was ſurrounded on all ſides, and in the utmoſt danger. Douglas perceived his danger, and requeſted the king to let him go to his aſſiſtance. Robert at firſt refuſed, but afterwards conſented with reluctance. Douglas ſet out without delay; but as he approached he ſaw the Engliſh falling into diſorder; upon which he called to his men to ſtop, and not diminiſh the glory of Randolph and his men by ſharing their victory.

163 An Engliſh knight killed in ſingle combat by king Robert,

Robert was in the front of the line when the vanguard of the Engliſh appeared. He was meanly dreſſed, with a crown above his helmet, and a battle-ax in his hand. Henry de Bohun, an Engliſh knight, armed cap-a-pee, rode forward to encounter him. Robert did not decline the combat, and ſtruck his antagoniſt ſo violently with his battle-ax, that he is ſaid to have cleft him down to the chin; after which the Engliſh vanguard retreated in confuſion. The Scottiſh generals are ſaid to have blamed their king for his raſhneſs in thus encountering Bohun; and he himſelf, conſcious of the juſtice of their charge, only replied, "I have broke my good battle-ax."

164 Commanders of the Engliſh army,

On Monday the 24th of June, the whole Engliſh army moved on to the attack. The van, conſiſting of archers and lancemen, was commanded by Gilbert de Clare earl of Glouceſter, nephew to the Engliſh king, and Humphry de Bohun conſtable of England; but the ground was ſo narrow, that the reſt of the army had not ſufficient

Scotland. ſufficient room to expand itſelf; ſo that it appeared to the Scots as conſiſting of one great compact body. The main body was brought up by Edward in perſon, attended by Aymer de Valence earl of Pembroke, and Sir Giles d'Argentine, two experienced commanders. Maurice abbot of Inchaffray, placing himſelf in a conſpicuous ſituation, celebrated maſs in the ſight of the Scottiſh army. Having paſſed along the ranks, barefooted, with a crucifix in his hands, and in few words exhorted the Scots to fight for their rights and liberty. The Scots fell down on their knees; which being perceived by Edward, he cried out, "They yield! See, they implore mercy." "They do," anſwered Umfraville, one of his commanders, "they do implore mercy, but not from us. On that field they will be victorious or die."

165 The Engliſh entirely defeated.

As both parties were violently exaſperated againſt each other, the engagement began with great fury. The king of Scotland, perceiving that his troops were grievouſly annoyed by the Engliſh archers, ordered Sir Robert Keith the mariſchal, with a few armed horſemen, to make a circuit and attack the archers in flank. This was inſtantly accompliſhed; and as the weapons of the archers were uſeleſs in a cloſe encounter, they could make very little reſiſtance, at the ſame time that their flight ſpread diſorder through the whole army.

Robert now advanced with the reſerve: the whole Engliſh army was in the utmoſt confuſion; for the defeat of the archers had decided the victory in favour of the Scots. The young and gallant earl of Glouceſter attempted to rally the fugitives, but was thrown from his horſe, and cut in pieces, which increaſed the general confuſion. At this critical moment, the numerous attendants on the Scottiſh camp, prompted by curioſity or the deſire of plunder, iſſued from their retirement. The Engliſh miſtook them for a body of freſh troops coming to the aſſiſtance of their enemies, and fled with precipitation on all ſides. Many ſought refuge among the rocks in the neighbourhood of Stirling caſtle, and many were drowned in the rivers. Pembroke and Sir Giles d'Argentine had never quitted Edward during the action; but now, ſeeing the battle irretrievably loſt, Pembroke conſtrained the king to quit the field. D'Argentine refuſed to fly. He was a man of great valour, and had a high reputation in Scotland. According to the vulgar opinion, the three moſt eminent worthies in that age were the emperor Henry of Luxemburg, Robert Bruce, and Giles d'Argentine. He is ſaid to have thrice encountered two Saracen warriors in Paleſtine, and to have killed them both each time. His valour now availed him but little; for ruſhing into the midſt of the Scots army, he was inſtantly cut in pieces. Douglas, with 60 horſemen, purſued Edward cloſe. At the Torwood he met Sir Laurence Abernethy, who was haſtening to the Engliſh rendezvous with twenty horſemen. The latter ſoon abandoned the cauſe of the vanquiſhed, and joined Douglas in the purſuit of Edward, who fled to Linlithgow. He had ſcarcely arrived there, when he was alarmed by the approach of the Scots, and again obliged to fly. Douglas and Abernethy followed him with ſuch aſſiduity, that (as lord Hailes chooſes to Latiniſe the expreſſion of an ancient hiſtorian) *non dabant illi mingendi locus concederetur;* but notwithſtanding their utmoſt efforts, Edward got ſafe to Dunbar, where he was received by the earl of March, who protected him till he could be conveyed by ſea to England.

166 Edward eſcapes to Dunbar, and thence to England.

Such was the deciſive battle of Bannockburn, the greateſt defeat the Engliſh ever ſuſtained from the Scots. On the ſide of the latter no perſons of note were ſlain, excepting Sir William Vipont, and Sir Walter Ruthven favourite of Edward Bruce; and ſo great only was Edward's diſlike by the death of this man, that he exclaimed, "O that this day's work were undone, ſo Ruthven had not died!" On the Engliſh ſide were ſlain 27 barons and baronets, and 22 taken priſoners; of knights there were killed 500 and 700 taken priſoners; of eſquires there fell 700; but the number of the common men who were killed or taken was never known with any certainty. The Welſh who had ſerved in the Engliſh army were ſcattered over the country, and cruelly butchered by the Scottiſh peaſants. The Engliſh, who had taken refuge among the rocks in the neighburhood of Stirling, ſurrendered at diſcretion: the caſtle was ſurrendered, and the privy-ſeal of England fell into the hands of the king of Scots. The ſpoils of the Engliſh camp were immenſe, and enriched the conquerors, along with the ranſom of many noble priſoners who fell into their hands. Robert ſhowed much generoſity in his treatment of the priſoners who fell to his ſhare. He ſet at liberty Ralph de Monthermer, and Sir Marmaduke Twerge, two officers of high rank, without ranſom; and by humane and generous offices alleviated the misfortune of the reſt. The dead bodies of the earl of Glouceſter and the lord Clifford were ſent to England, that they might be interred with the uſual ſolemnity. There was one Baſton, a Carmelite friar and poet, whom Edward is ſaid to have brought with him in his train to be ſpectator of his atchievements, and to record his triumphs. Baſton was made priſoner, and obliged to celebrate the victory of Robert over the Engliſh. This he did in wretched Latin Rhymes; which, however, procured his liberty. After the battle of Bannockburn, the earl of Hereford retreated to the caſtle of Bothwell, where he was beſieged by Edward Bruce, and ſoon obliged to ſurrender. He was exchanged for the wife, ſiſter, and daughter of the king, the young earl of Mar, and the biſhop of Glaſgow.

167 Loſs of the Engliſh at the battle of Bannockburn.

168 The earl of Hereford ſurrenders.

The terror of the Engliſh after the defeat at Bannockburn is almoſt incredible. Walſingham aſſerts, that many of them revolted to the Scots, and aſſiſted them in plundering their own country. "The Engliſh," ſays he, "were ſo bereaved of their wonted intrepidity, that an hundred of that nation would have fled from two or three Scotſmen." Edward Bruce and Douglas entered England on the eaſtern ſide, ravaged Northumberland, and laid the biſhopric of Durham under contribution. From thence they proceeded to Richmond, laid Appleby and ſome other towns in aſhes, and returned home loaded with plunder. Edward ſummoned a parliament at York, in order to concert means for the public ſecurity; and appointed the earl of Pembroke, formerly the guardian of Scotland, to be guardian of the country between the Trent and the Tweed. Robert, however, ſent ambaſſadors to treat of a peace; but the Scots were too much elated with their good fortune to make conceſſions, and the Engliſh were not yet ſufficiently humbled to yield to all their demands. The ravages of war were again renewed: the Scots continued their incurſions into England, and levied contributions in different places.

169 Conſternation of the Engliſh.

In 1315 the Engliſh affairs ſeemed a little to mend.

The

Scotland. The Scots, indeed, plundered Durham and Hartlepool; but they were repulſed from Carliſle, and failed in an attempt on Berwick. The Iriſh of Ulſter, oppreſſed by the Engliſh government, implored the aſſiſtance of Robert, and offered to acknowledge his brother Edward as their ſovereign; who accordingly landed at Carrickfergus on the 25th of May 1315, with 6000 men.—This was an enterprize evidently beyond the power of Scotland to accompliſh, and which could not but be perceived by Robert. However, there were motives which induced him to conſent. The offer of a crown, though ever ſo viſionary, inflamed the ambition of Edward Bruce, whoſe impetuous valour made no account of difficulties, however great. It might have been deemed ungenerous, and perhaps would not have been politic or ſafe, to have rejected the propoſals of the Iriſh for the advancement of his brother, to whom the king owed more than he could repay. Beſides, the invaſion of Ireland ſeemed a proper expedient for dividing the Engliſh forces. The event proved unfortunate. Edward, after performing and ſuffering more than could almoſt have been expected from human nature, was at laſt defeated and killed by the Engliſh, as is related under the article IRELAND, n° 42.

171 He is defeated and killed.

The king himſelf had gone over into Ireland, in order to aſſiſt his brother in attempting the ſubjection of that country; and during his abſence the Engliſh had made ſeveral attempts to diſturb the tranquillity of Scotland. The earl of Arundel invaded the foreſt of Jedburgh with a numerous army; but being drawn into an ambuſcade by Douglas, he was defeated with great loſs. Edmund de Cailaud, a knight of Gaſcony and governor of Berwick, invaded and waſted Teviotdale; but while he was returning home loaded with ſpoil, he was attacked, defeated, and killed by Douglas. Soon after this, intelligence was conveyed to Douglas that one Robert Neville had boaſted that he would encounter him whenever he ſaw his banner diſplayed. Douglas did not long delay to give him an opportunity. He advanced to the neighbourhood of Berwick, diſplayed his banner, and burnt ſome villages. Neville, provoked at theſe ravages, took the field, encountered Douglas, and was defeated and killed. By ſea the Engliſh invaded Scotland, and anchored off Inverkeithing in the frith of Forth, where they ſoon after landed. Five hundred men, under the command of the earl of Fife and the ſheriff of that country, attempted to oppoſe their landing, but were intimidated by the number of their enemies. William Sinclair biſhop of Dunkeld happened to meet the fugitives; and having by his reproaches obliged them to rally, he led them on again to the charge, and drove the Engliſh to their ſhips with conſiderable loſs. For this exploit Robert conferred the title of *the king's biſhop* on Sinclair; and he was long remembered by his countrymen on this account.

172 Unſucceſsful attempts of the Engliſh on Scotland.

In 1317, after king Robert had returned from his Iriſh expedition, a bull was iſſued by the pope (John XXII.) commanding a two years truce between England and Scotland, under pain of excommunication. Two cardinals were diſpatched into Britain to make known his commands; and they were privately empowered to inflict the higheſt ſpiritual cenſures on Robert Bruce, or whomſoever elſe they thought proper. About the beginning of September 1317, two meſſengers were ſent to Robert by the cardinals. The king gave them a gracious reception; and after conſulting with his barons returned for anſwer, that he very much deſired a good and perpetual peace, either by the mediation of the cardinals, or by any other means. He allowed the *open* letters from the pope, which recommended peace, to be read in his preſence, and liſtened to them with due reſpect. But he would not receive the *ſealed* letters addreſſed to *Robert Bruce governor of Scotland*, alleging, that there might be many of his barons whoſe names were *Robert Bruce*, and that theſe barons might probably have ſome ſhare in the government. Unleſs, therefore, the letters were addreſſed to him as *king of Scotland*, he could not receive them without advice of his parliament, which he promiſed immediately to aſſemble on the occaſion. The meſſengers attempted to apologiſe for the omiſſion of the title of KING. "The holy church was not wont," they ſaid, "during the dependence of a controverſy, to write or ſay any thing which might be interpreted as prejudicial to the claims of either of the contending parties." "Since then," anſwered the king, "my ſpiritual father and my holy mother would not *prejudice* the cauſe of my adverſary by beſtowing on me the appellation of *king* during the dependence of the controverſy, they ought not to have *prejudiced* my cauſe by withdrawing that appellation from me. I am in poſſeſſion of the kingdom of Scotland; all my people call me king; and foreign princes addreſs me under that title; but it ſeems that my parents are partial to their Engliſh ſon. Had you preſumed to preſent letters with ſuch an addreſs to any other ſovereign prince, you might perhaps have been anſwered in a harſher ſtyle; but I reverence you as the meſſengers of the holy ſee."

174 Spirited behaviour of Robert.

The meſſengers, quite abaſhed with this reply, changed the diſcourſe, and requeſted the king that he would conſent to a temporary ceſſation of hoſtilities; but to this he declared, that he never would conſent, while the Engliſh daily invaded and plundered his people. His counſellors, however, informed the meſſengers, that if the letters had been addreſſed to the *king of Scots*, the negociations would inſtantly have been opened. This diſreſpectful omiſſion they imputed to the intrigues of the Engliſh at the court of Rome, hinting at the ſame time that they had received this intelligence from Avignon.

175 A papal truce proclaimed in Scotland.

When the meſſengers had informed the cardinals of theſe proceedings, the latter determined to proclaim the papal truce in Scotland; in which hazardous office they employed Adam Newton, guardian of the monaſtery of Minorites at Berwick, who was charged with letters to the clergy of Scotland, particularly to the biſhop of St Andrew's. The monk found the king encamped with his army in a wood near old Cambus, making preparations for aſſaulting Berwick. Perſonal acceſs was denied to the king; but the monk, in obedience to his maſters, proclaimed the truce by the authority of the pope. The king ſent him for anſwer, that he would liſten to no bulls, till he was treated as king of Scotland, and had made himſelf maſter of Berwick.

176 Which is diſregarded by the king.

The poor monk, terrified at this anſwer, requeſted either a ſafe conduct to Berwick, or permiſſion to paſs into Scotland, and deliver his letters to the Scottiſh clergy. Both were refuſed; and he was commanded to leave the country without loſs of time. He ſet out for Berwick; but in his way thither was attacked by robbers,

173 Negociations with the Pope.

Scotland.

robbers, or ſome who pretended to be ſo. By them he was ſtripped and robbed of all his parchments, together with his letters and inſtructions; the robbers alſo, it is ſaid, tore the pope's bull, without any regard to its ſanctity.

177 Berwick beſieged and taken by the Scots.

In 1318, king Robert proceeded in his enterprize againſt Berwick, but reſolved to employ artifice as well as force in the reduction of it. A citizen of Berwick, by name *Spalding*, having been ill uſed by the governor, reſolved to revenge himſelf; and therefore wrote a letter to a certain Scottiſh lord, whoſe relation he had married, offering on a certain night to betray the poſt where he kept guard. The nobleman communicated this important intelligence to the king. "You did well," ſaid Robert, "in making me your confident; for if you had told this either to Randolph or Douglas, you would have offended the one whom you did not truſt: Both of them, however, ſhall aid you in the execution of the enterprize." The king then commanded him to repair to a certain place with a body of troops; to which place he alſo gave ſeparate orders to Douglas and Randolph to repair at the ſame hour, each with a body of troops under his command. The forces thus cautiouſly aſſembled marched to Berwick, and, aſſiſted by Spalding, ſcaled the walls, making themſelves maſters of the town in a few hours. The garriſon of the caſtle perceiving that the number of Scots was but ſmall, made a deſperate ſally with the men who had fled into the caſtle from the town; but, after an obſtinate conflict, they were defeated and driven back, chiefly by the extraordinary valour of a young knight named *Sir William Keith of Galſton*.—This happened on the 28th of March 1318.

178 Who invade England with great ſucceſs.

King Robert no ſooner heard of the ſucceſs of his forces againſt the town, than he haſtened to lay ſiege to the caſtle of Berwick. This was ſoon obliged to capitulate; after which the Scots entered Northumberland, and took the caſtles of Wark, Harbottle, and Mitford. In May, they again invaded England, and penetrated into Yorkſhire. In their progreſs they burnt the towns of Northallerton, Boroughbridge, Scarborough, and Skipton in Craven, forcing the inhabitants of Ripon to redeem themſelves by paying 1000 merks: after which they returned to Scotland with much booty; and, as an Engliſh hiſtorian expreſſes it, "driving their priſoners before them like flocks of ſheep."

This year the interpoſition of the pope was obtained againſt Robert, with a view to intimidate the Scottiſh nation; and the two cardinals reſiding in England were commanded to excommunicate *Robert Bruce and his adherents*, on account of his treatment of the meſſengers of the holy ſee, and his aſſault of Berwick, after a truce had been proclaimed by the papal authority.—

179 King Robert excommunicated by the Pope.

This ſentence was accordingly put in execution, though Robert had certainly been excommunicated *once*, if *not* oftener, before. Meſſengers were ſent from Scotland to Rome, in order to procure a reverſal of the ſentence; but Edward diſpatched the biſhop of Hereford, and Hugh d'Eſpencer the Elder, to counteract this negociation, informing his holineſs at the ſame time of certain intercepted letters which had been written from Avignon to Scotland; upon which the pope ordered all the Scots reſiding at Avignon, and all of that place who had correſponded with Scotland, to be taken into cuſtody.

The moſt remarkable tranſaction of this year, however, was the defeat and death of Edward Bruce in Ireland; of which an account is given under the article IRELAND, n° 42. His body was quartered, and diſtributed for a public ſpectacle over Ireland; and his head was preſented to Edward by John lord Bermingham the commander of the Engliſh army, in return for which ſervice, he was rewarded with the title of *Earl of Louth*.

Scotland.

In the mean time Edward, who had ſummoned a parliament to meet at Lincoln, was obliged to prorogue it on account of the Scottiſh invaſion, and to aſſemble an army at York for the defence of his country. At Michaelmas it was determined, in a parliament held at London, that every city and town in England ſhould furniſh a certain proportion of men completely armed. Thus a conſiderable body of troops was ſoon raiſed; but, when they aſſembled at York, their party-animoſities and mutual diſguſt roſe to ſuch an height, that it was found neceſſary to ſend them back to their habitations.

In 1319, Edward, having ſucceeded ſo well in his negociations with the court of Rome, reſolved to make ſimilar attempts with other powers to the prejudice of the Scottiſh nation. Accordingly he requeſted the count of Flanders to prohibit the Scots from entering his country: but to this requeſt he received the following remarkable reply: "Flanders is the common country of all men; I cannot prohibit any merchants from trafficking thither, for ſuch prohibition would prove the ruin of my people." Finding himſelf baffled in this attempt, the Engliſh monarch once more determined to have recourſe to war; and with this view commanded his army to aſſemble at Newcaſtle upon Tyne, on the 24th of July 1319: but before he proceeded, he requeſted the prayers of the clergy for the ſucceſs of his expedition; and to render their prayers the more effectual, he at the ſame time demanded from them a great ſum of money by way of loan.

180 Edward again invades Scotland.

Every thing being now in readineſs, the Engliſh army approached Berwick, which was commanded by Walter the Steward of Scotland. This nobleman had long apprehended an attack from the Engliſh, and had taken every means of defence in his power. The enemy, however, confiding in their numbers, made a general aſſault; but were repulſed on the 7th of September, after a long and obſtinate conteſt. Their next attempt was on the ſide towards the river. At that time the walls of Berwick were of an inconſiderable height; and it was propoſed to bring a veſſel cloſe to them, from whence the troops might enter by a drawbridge let down from the maſt. But the Scots annoyed the aſſailants ſo much, that they could not bring this veſſel within the proper diſtance; and at the ebb of the tide it grounded, and was burnt by the beſieged.

181 Berwick beſieged by the Engliſh.

—The Engliſh had then recourſe to a new-invented engine which they called a *ſow*, but for what reaſon is unknown. In many particulars it reſembled the *aglides arietaria* of the ancients. It appears to have been a large fabric compoſed of timber, and well-roofed, having ſtages within it, and in height ſurpaſſing the wall of the town. It was moved upon wheels, and ſerved for the double purpoſe of conducting the miners to the foot of the wall, and armed men to the ſtorm. This machine was counteracted by one contrived by John

182 A new invented engine called a ſow.

Scotland. Crab, a Flemiſh engineer in the Scots ſervice. This was a kind of moveable crane, whereby great ſtones might be raiſed on high, and then let fall upon the enemy. The Engliſh made a general aſſault on the quarter towards the ſea, as well as on the land ſide; ſo that the garriſon, exhauſted by continual fatigue, could ſcarce maintain their poſts. The great engine moved on to the walls; and, though ſtones were inceſſantly diſcharged againſt it from the crane, their effect was ſo ſmall that all hope of preſerving Berwick was loſt.

183 Deſtroyed by the Scots. At length a huge ſtone ſtruck it with ſuch force, that the beams gave way, and the Scots pouring down combuſtibles upon it, it was reduced to aſhes. The Engliſh, however ſtill continued the attack. The Steward, with a reſerve of 100 men, went from poſt to poſt, relieving thoſe who were wounded or unfit for combat. One ſoldier of the reſerve only remained with him when an alarm was given that the Engliſh had burnt a barrier at the port called *St Mary's*, poſſeſſed themſelves of the draw bridge, and fired the gate. The Steward haſtened thither, called down the guard from the rampart, ordered the gate to be ſet open, and ruſhed out upon the enemy. A deſperate combat enſued, and continued till the cloſe of the day, when the Engliſh commanders withdrew their troops.

184 Who invade England. Notwithſtanding this brave defence, it was evident that the town could not hold out long without a ſpeedy relief; and Robert could not, with any probability of ſucceſs attack the fortified camp of the Engliſh. He therefore determined to make a powerful diverſion in England, in order to oblige Edward to abandon the undertaking. By order of the king, 15,000 men entered England by the weſtern marches. They had concerted a plan for carrying off the queen of England from her reſidence near York; but being diſappointed in this attempt they laid waſte Yorkſhire. The archbiſhop of York haſtily collected a numerous body of commons and eccleſiaſtics, with whom he encountered the Scots at Mitton, near Borough-bridge, in the north-riding of Yorkſhire.

185 The Engliſh defeated and the ſiege of Berwick raiſed. The Engliſh were inſtantly routed; 3000 were left dead on the field, and great part of thoſe who fled periſhed in the river Swale. In this action 300 eccleſiaſtics loſt their lives. The news of this ſucceſsful inroad alarmed the beſiegers of Berwick. The barons whoſe eſtates lay to the ſouthward remote from the Scottiſh depredations were eager for continuing the ſiege. But they were oppoſed by thoſe of the north; who were no leſs eager to abandon the enterpriſe, and return to the defence of their own country. With them the earl of Lancaſter concurred in opinion; who, underſtanding that his favourite manor of Pontefract was expoſed to the ravages of the Scots, departed with all his adherents. Edward, upon this, drew off the remainder of his army, and attempted to intercept Randolph and Douglas; but they eluded him, and returned in ſafety to Scotland.

The unſucceſsful event of this laſt attempt induced Edward ſeriouſly to think of peace; and accordingly a truce between the two nations was concluded on the 21ſt of December 1319; which interval of tranquillity the Scots made uſe of in addreſſing a manifeſto to the pope in juſtification of their cauſe. This was drawn up in a ſpirited manner, and made a very conſiderable alteration in the councils of Rome. The pope, foreſeeing that Robert would not be terrified into ſubmiſſions, ordered Edward to make peace with him in the beſt manner he could. A negociation was accordingly ſet on foot, which ſoon terminated ineffectually; the truce was not renewed, and in 1322 a mutual invaſion took place. The Scots penetrated into Lancaſhire by the weſtern marches; and, after plundering the country, returned home with an extraordinary booty; while Edward made great preparations for an expedition into Scotland, which took place in Auguſt the ſame year. In this, however, he was not attended with ſucceſs. Robert had cauſed all the cattle to be driven off, and all the effects of any value to be removed from Lothian and the Merſe; fixing his camp at Culroſs, on the north ſide of the frith of Forth. His orders for removing the cattle were ſo punctually obeyed, that, according to common tradition, the only prey which fell into the hands of the Engliſh was a lame bull at Tranent in Eaſt Lothian. Edward, however, ſtill proceeded, and penetrated as far as Edinburgh, but without any hopes of ſubduing the kingdom. His proviſions being conſumed, many of his ſoldiers periſhed for want; and he was obliged at laſt to retire without having ſeen an enemy. On their return, his ſoldiers burnt the abbeys of Holyrood, Melroſs, Dryburgh, &c. killed many of the monks, and committed other ſacrileges: but when they returned to their own country, and began again to enjoy a plentiful living, they indulged themſelves in ſuch exceſſes as were productive of mortal diſeaſes; inſomuch that, according to an Engliſh hiſtorian, almoſt one half of the great army which Edward had brought from England with him were deſtroyed either by hunger or gluttony.

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186 England again invaded by the Scots, and Scotland by the Engliſh.

187 Great part of Edward's army deſtroyed.

No ſooner were the Engliſh retired than they were purſued by the Scots, who laid ſiege to the caſtle of Norham. Edward lay at the abbey of Biland in Yorkſhire, with a body of troops advantageouſly poſted in the neighbourhood. The Scots, invited, as is ſaid, by ſome traitors about the king's perſon, attempted to ſurpriſe him; and it was with the utmoſt difficulty that he made his eſcape to York, abandoning all his baggage and treaſure to the enemy. The Engliſh camp was ſuppoſed to be acceſſible only by a narrow paſs, but Douglas undertook to force it, and Randolph preſented himſelf as a volunteer in this dangerous ſervice under his friend Douglas. The Highlanders and men of the Iſles climbed the precipice on which the Engliſh camp ſtood, and the enemy were driven out with great loſs. The Scots purſued them to the very gates of York, waſted the country without controul, and returned home unmoleſted.

188 The Engliſh defeated and driven out of their camp.

Edward, diſheartened by repeated loſſes, agreed to a ceſſation of arms "with the men of Scotland who were engaged in war with him," But the king of Scotland would not conſent to it in that form; however, he gave his conſent, on the proper form being employed, to which Edward now made no objection. This treaty was concluded on the 30th of March 1323, and was to endure until the 12th of June 1336. It was agreed, that, during the continuance of it, no new fortreſſes ſhould be erected in Cumberland, to the north of the Tyne, or in the counties of Berwick, Roxburgh, or Dumfries; and by a very ſingular article it was provided, that "Bruce and the people of Scotland might procure abſolution from the pope; but in caſe there was no peace concluded before the expiration of the truce,

189 A truce concluded between England and Scotland.

Scotland.

truce, that the ſentence of excommunication ſhould revive." The treaty was ratified by Robert, under the ſtyle of the *king of Scotland*, 7th of June 1323.

The next care of Robert was to reconcile himſelf to the church, and to obtain from the pope the title of *king*, which had been ſo long denied him; which at laſt, though not without great difficulty, was obtained.

190 Birth of David Bruce.

This year a ſon was born to the king of Scotland at Dunfermline, and named *David*. The court-poets of the time foretold, that this infant would one day rival his father's fame, and prove victorious over the Engliſh. But ſcarce had this future hero come into the world, when a rival began to make his appearance.

191 Edward Baliol makes his appearance at the court of England.

John Baliol, the unfortunate king of Scotland, had long been dead; but left a ſon named *Edward*, heir to his pretenſions to the crown. The young prince had reſided on his paternal eſtate in Normandy, neglected and forgotten; but in 1324 was called to the court of England, for the purpoſe, undoubtedly, of ſetting him up as a rival to young David Bruce, in caſe his father, now broken with fatigues, ſhould die in a ſhort time. The negociations for peace, however, ſtill went on; but the commiſſioners appointed for this purpoſe made little progreſs, by reaſon of demands for feudal ſovereignty ſtill made by the Engliſh. The reconciliation with the church was alſo broken off, by reaſon of the Scots keeping poſſeſſion of Berwick. This had been taken during the papal truce; and Robert thought proper ſtill to lie under the ſentence of excommunication rather than to part with ſuch an important fortreſs.

In the beginning of the year 1327, Edward II. was depoſed, and ſucceeded by his ſon Edward III. then in his 15th year. He renewed the negociations for peace, and ratified the truce which his father had made; but hearing that the Scots had reſolved to invade England if a peace was not immediately concluded, he ſummoned his barons to meet him at arms at Newcaſtle, and fortified York.—We are not certainly informed of the reaſons which induced the Scots at this time to diſregard the truce; however, it is certain, that on the 15th of June 1327, Douglas and Randolph invaded England by the weſtern marches, with an army of 20,000 horſemen. Againſt them Edward III. led an army, conſiſting, at the loweſt calculation, of 30,000 men, who aſſembled at Durham on the 13th of July. The Scots proceeded with the utmoſt cruelty, burning and deſtroying every thing as they went along; and on the 18th of the ſame month, the Engliſh diſcovered them by the ſmoke and flames which marked their progreſs. They marched forward in order of battle towards the quarter where the ſmoke was perceived; but, meeting with no enemy for two days, they concluded that the Scots had retired. Diſencumbering themſelves then of their heavy baggage, they reſolved by a forced march to reach the river Tyne, and, by poſting themſelves on the north bank of that river, to intercept the Scots on their return. On the 20th of July, the cavalry having left the infantry behind, croſſed the river at Haidon: but before the reſt of the army could come up, the river was ſo ſwelled by ſudden rains, that it could no longer be forded; and thus the troops remained divided for ſeveral days, without any accommodation for quarters, and in the greateſt want of proviſions and forage. The ſoldiers now began to murmur: and it was reſolved again to proceed ſouthwards. The king proclaimed a reward of lands, to the value of 100 l. yearly for life, to the perſon who ſhould firſt diſcover the enemy "on dry ground, where they might be attacked;" and many knights and eſquires ſwam acroſs the river on this ſtrange errand. The army continued its march for three days without any news of the Scots; but on the fourth day, certain accounts of them were brought by an eſquire, Thomas Rokeby: who reported, that "the Scots had made him priſoner; but that their leaders, underſtanding his buſineſs, had ſet him at liberty; ſaying, that they had remained for eight days on the ſame ground, as ignorant of the motions of the Engliſh as the Engliſh were of theirs, and that they were deſirous and ready to combat." With this man for their guide, the Engliſh ſoon came in view of the Scots. They were advantageouſly poſted on a riſing ground, having the river Were in front, and their flanks ſecured by rocks and precipices. The Engliſh diſmounted and advanced, hoping to allure the Scots from their ſtrong poſt; but in vain. Edward then ſent a herald to Randolph and Douglas, with a meſſage in the ſtyle of chivalry: "Either," ſays he "ſuffer me to paſs the river, and leave me room for ranging my forces; or do you paſs the river, and I will leave you room to range yours; and thus ſhall we fight on equal terms." To this the Scottiſh commanders anſwered, "We will do neither. On our road hither we have burnt and ſpoiled the country; and here we are fixed while to us it ſeems good; and if the king of England is offended let him come over and chaſtiſe us."

192 Douglas and Randolph invade England.

193 Edward III. marches againſt them.

194 A reward is charged to offer to the perſon diſcovering where they are.

The armies continued in ſight of each other for two days; after which the Engliſh, underſtanding that their enemies were diſtreſſed for proviſions reſolved to maintain a cloſe blockade, and to reduce them by famine. Next day, however, they were ſurpriſed to find that the Scots had ſecretly decamped, and taken poſt two miles up the river in ground ſtill ſtronger, and of more difficult acceſs, amidſt a great wood. The Engliſh encamped oppoſite to them near Stanhope park. At midnight Douglas undertook a moſt deſperate enterpriſe, ſomewhat reſembling thoſe of the ancient heroes. With 200 horſemen he approached the Engliſh camp, and entered it under the guiſe of a chief commander calling the rounds. Having thus eluded the centinels, he paſſed on to the royal quarters, overthrew every thing that oppoſed him, and furiouſly aſſaulted the king's tent. The domeſtics of Edward deſperately defended their maſter; and his chaplain, with many others of his houſehold, were ſlain. However, the king himſelf eſcaped; and Douglas, diſappointed of his prey ruſhed through the enemy, and effected a retreat with inconſiderable loſs.—The following day, the Engliſh learned from a priſoner, that orders had been iſſued in the Scottiſh camp for all men to hold themſelves in readineſs that evening to follow the banner of Douglas: on which, apprehending an attack in the night, they prepared for battle, lighting great fires, and keeping a ſtrict watch; but in the morning, they were informed by two trumpeters whom they had taken priſoners, that the Scots had decamped before midnight, and were returning to their own country. This report could ſcarcely be credited, and the army remained for ſome hours in order of battle; but at length ſome ſcouts having croſſed the river,

195 Deſperate attempt of Douglas to carry off the king of England.

196 The Scots decamp and return to their own country.

Scotland. river, returned with certain intelligence that the Scottiſh camp was totally deſerted: which when the young king of England was certainly informed of, he burſt into tears; for the enterpriſe, which thus terminated in diſappointment and diſhonour, had coſt an immenſe ſum. Every preparation had been made for oppoſing an enemy, and auxiliaries had even been procured at a moſt enormous expence from Hainault. Theſe auxiliaries conſiſted of heavy-armed cavalry; and they were now ſo much worn out, that they could ſcarcely move. Their horſes were all dead, or had become unſerviceable, in a campaign of three weeks; ſo that they were obliged to procure horſes to convey themſelves to the ſouth of England. Edward having reſted at Durham for ſome days, marched to York, where he diſbanded his army. Barbour a Scots hiſtorian, relates, that there was a moraſs in the rear of the Scottiſh camp, which he calls the *two-mile moraſs*; that the Scots made a way over it with bruſhwood, removing it as they went along, that the Engliſh might not purſue them by the ſame way. The Engliſh hiſtorians are filled with deſcriptions of the ſtrange appearance of the deſerted camp of the Scots. They found there a number of ſkins ſtretched between ſtakes, which ſerved for kettles to boil their meat; and for bread, each ſoldier carried along with him a bag of oatmeal, of which he made cakes, toaſting them upon thin iron plates, which appear to have been part of their armour.

On the return of Douglas and Randolph, the king led his army againſt the eaſtern borders, and beſieged the caſtle of Norham. However, in 1328, Edward, wearied out with continual loſſes and diſapointments, conſented to a perpetual peace between the two king-
197 The treaty of Northampton. doms on the following conditions. 1. The ſtone on which the kings of Scotland were wont to ſit at the time of their coronation, ſhall be reſtored to the Scots. 2. The king of England engages to employ his good offices at the papal court for obtaining a revocation of all ſpiritual proceſſes depending before the holy ſee againſt the king of Scots, or againſt his kingdom or ſubjects. 3. For theſe cauſes, and in order to make reparation for the ravages committed in England by the Scots, the king of Scots ſhall pay 30,000 merks to the king of England. 4. Reſtitution ſhall be made of the poſſeſſions belonging to eccleſiaſtics in either kingdom, whereof they may have been deprived during the war. 5. But there ſhall not be any reſtitution made of inheritances which have fallen into the hands of the king of England or of the king of Scots, by reaſon of the war between the two nations, or through the forfeiture of former poſſeſſors. 6. Johanna, ſiſter of the king of England, ſhall be given in marriage to David, the ſon and heir to the king of Scots. 7. The king of Scots ſhall provide the princeſs Johanna in a jointure of 2000l. yearly, ſecured on lands and rents, according to a reaſonable eſtimation. 8. If either of the parties ſhall fail in performing theſe conditions, he ſhall pay 2000 pounds of ſilver to the papal treaſury.

This peace, ratified at Northampton, is ſtyled *ignominious* by the Engliſh hiſtorians, and the marriage of the Scots prince to the king of England's ſiſter, denominated *that baſe marriage*; becauſe at this time all pretenſions to ſovereignty over Scotland were given up, though they had in vain attempted to eſtabliſh them by a ruinous war of 20 years. The marriage of the infant prince was celebrated on the 12th of July 1328. Scotland.

On the 7th of June 1329 died Robert Bruce, unqueſtionably the greateſt of all the Scottiſh monarchs. His death ſeems to have been occaſioned by the exceſſive fatigues of military ſervice; and his diſeaſe, called by the hiſtorians of thoſe times a leproſy, was probably an inveterate ſcurvy, occaſioned by his way of living. He died at the age of 55. He was married to Iſabella, daughter of Donald the tenth earl of Marr; by whom he had a daughter named Marjory, married to Walter the ſteward of Scotland; whoſe huſband died in 1326. The ſecond wife of Robert was Eliſabeth, the daughter of Aymer de Burgh earl of Ulſter. By her he had a ſon, David II.; a daughter named Margaret, married to William earl of Sutherland; another, named Matilda, married to an eſquire named Thomas Iſaac; and Elizabeth, married to Sir Walter Oliphant of Gaſk. He had alſo a natural ſon named Robert. 198 King Robert dies.

That king Robert I. was a man of unqueſtionable virtue and humanity, as well as unequalled in the knowledge of the military art, muſt be evident from many particulars already related. The only queſtionable part of his character is his ſevere puniſhment of a conſpiracy formed againſt him in the year 1320; a relation of which, to avoid interrupting our detail of more important matters, we have deferred till now.—The chief of the conſpirators were William de Soulis, whoſe anceſtor had been a candidate for the crown of Scotland; the counteſs of Strathern, and ſome other perſons of high rank. The counteſs diſcovered the plot; after which Soulis confeſſed the whole, and was puniſhed with perpetual impriſonment; as well as the counteſs, notwithſtanding her having made the diſcovery. Gilbert de Malyerb and John de Logie, both knights, and Richard Brown an eſquire, were put to death as traitors but the perſon moſt lamented was Sir David de Brechin, for his bravery ſtyled *the flower of chivalry*. He was nephew to the king, and ſerved with great reputation againſt the Saracens. To him the conſpirators, after having exacted an oath of ſecrecy, revealed their deſigns. He condemned their undertaking, and refuſed to ſhare in it; but did not diſcover it on account of the oath he had taken. Yet for this concealment he was tried as a traitor, condemned and executed, without regard to his perſonal merit or his relation to the king. The conſpirators were tried before the parliament at Scone in 1320; and this ſeſſion, in which ſo much blood was ſhed, was long remembered by the vulgar under the name of the *black parliament*. Whether there was any thing real in this conſpiracy, or whether the king only made uſe of this pretence to rid himſelf of ſuch as were obnoxious to him, cannot now be known with certainty. 199 Account of a conſpiracy againſt him.

After the death of Robert, the adminiſtration was aſſumed by Randolph, in conſequence of an act paſſed in 1318, by which he was appointed regent in caſe of the king's death. In his new character he behaved himſelf in a moſt exemplary manner; and by impartially diſcharging the duties of his ſtation, and rigidly adminiſtering juſtice, he ſecured the public tranquillity in the moſt perfect manner. A ſevere exerciſe of juſtice was now rendered not only neceſſary, but indiſpenſable. 200 Randolph appointed regent.

During

Scotland.

During a long courſe of war, the common people had been accuſtomed to plunder and bloodſhed; and having now no Engliſh enemies to employ them, they robbed and murdered one another. The methods by which Randolph repreſſed theſe crimes were much the ſame with thoſe which have been adopted in latter times; for he made the counties liable for the ſeveral robberies committed within their bounds. He even ordered the farmers and labourers not to houſe the tools employed by them in agriculture during the night-time, that the ſheriff's officers might be the more vigilant in ſecuring them. He gave orders for ſeverely puniſhing all vagabonds, and obliged them to work for their livelihood; making proclamation, that no man ſhould be admitted into a town or borough who could not earn his bread by his labour. Theſe regulations were attended with the moſt ſalutary effects. A fellow who had ſecreted his own plough-irons, pretending that they were ſtolen, being detected by the ſheriff's officers, was inſtantly hanged. A certain man having killed a prieſt, went to Rome, and obtained abſolution from the pope; after which he boldly returned to Scotland. Randolph ordered him to be tried, and, on his conviction, to be executed: "Becauſe," ſaid he, "although the pope may grant abſolution from the ſpiritual conſequences of ſin, he cannot ſcreen offenders from civil puniſhment."

201 His excellent adminiſtration.

King Robert, juſt before his death, had deſired that his heart might be depoſited in our Saviour's ſepulchre at Jeruſalem; and on this errand the great commander Douglas was employed, who ſet ſail in June 1330 with a numerous and ſplendid retinue. He anchored off Sluys in Flanders, the great emporium of the low countries, where he expected to find companions in his pilgrimage; but learning that Alphonſus XI. the young king of Leon and Caſtile, was engaged in a war with Oſmyn the Moor, he could not reſiſt the temptation of fighting againſt the enemies of Chriſtianity. He met with an honourable reception at the court of Spain, and readily obtained leave to enter into what was thought the common cauſe of Chriſtianity. The Spaniards firſt came in ſight of their enemy near Theba, a caſtle on the frontiers of Andaluſia, towards the kingdom of Granada. The Moors were defeated; but Douglas giving way to his impetuous valour purſued the enemy too eagerly, and throwing among them the caſket which contained the heart of his ſovereign, cried out, "Now paſs thou onward as thou wert wont; Douglas will follow thee or die." The fugitives rallied and ſurrounded Douglas; who, with a few of his followers, was killed in attempting to reſcue Sir Walter St Clar of Roſlin. His body was brought back to Scotland, and interred in the church of Douglas. His countrymen perpetuated his memory by beſtowing upon him the epithet of *the good Sir James Douglas*. He was one of the greateſt commanders of the age; and is ſaid to have been engaged in 70 battles, 57 of which he gained, and was defeated in 13.—Of him it is reported, that meeting with an officer at the court of Alphonſus, who had his face quite diſfigured with ſcars, the latter ſaid to him, "It aſtoniſhes me, that you, who are ſaid to have ſeen ſo much ſervice, ſhould have no marks of wounds on your face." "Thank heaven," anſwered Douglas, "I had always an arm to protect my face."

202 Douglas ſets out for the Holy Land with King Robert's heart.

Scotland.

203 Is killed by the Moors in Spain.

In 1331, Edward Baliol began to renew his pretenſions to the crown of Scotland, about the ſame time that David II. and his conſort Johanna were crowned at Scone; which ceremony was performed on the 24th of November. Some hiſtorians relate, that he was excited to this attempt by one Twynham Lowriſon, a perſon who had been excommunicated for refuſing to do penance for adultery, and afterwards was obliged to fly on account of his having way-laid the official, beat him, and extorted a ſum of money from him. But however this may be, it is certain, that in this year differences began to ariſe with England, on the following account It had been provided by an article of the treaty of Northampton, that "Thomas lord Wake of Ledel, Henry de Beaumont, called *earl of Buchan*, and Henry de Percy, ſhould be reſtored to their eſtates, of which the king of Scots, by reaſon of the war between the two nations, had taken poſſeſſion." This article had been executed with reſpect to Percy, but not to the other two; and though Edward had repeatedly complained of this neglect, he could not obtain any ſatisfaction (G).

204 Edward Baliol claims the crown of Scotland.

The diſinherited barons now reſolved to invade Scotland, though their force conſiſted of no more than 3000 infantry,

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(G) As this is an important period of hiſtory, we ſhall here tranſcribe the opinion of lord Hailes concerning the cauſes of this ſtrange delay of executing an article ſeemingly of little importance where a nation was concerned. "By the treaty of Northampton," ſays he, "all the claims of the Engliſh barons to inheritances in Scotland were diſregarded, excepting thoſe of Henry de Percy, Thomas lord Wake of Ledel, and Henry de Beaumont. Percy procured ſatisfaction: but the others did not.

"Henry de Beaumont, in the reign of Edward II. had aſſociated himſelf with the nobility againſt the D'Eſpenſers, and on that account had ſuffered impriſonment and exile. He aided queen Iſabella in the invaſion which proved the cauſe of the depoſition, captivity and death of her huſband. Although, under the adminiſtration of Mortimer, he had obtained a ſhare in the partition of the ſpoils of the D'Eſpenſers, he perſiſted in oppoſing the meaſures of the new favourite; and although his own intereſts were ſecured by the treaty of Northampton, he boldly exclaimed againſt the injuſtice done to the other barons by that treaty. He joined the princes of the blood-royal in their attempt to reſcue the young king from the hands of Iſabella and her minion, and place him in their own; and, on the failure of that ill-adviſed conſpiracy, he again took refuge in foreign parts. It appears that lord Wake, having followed the political opinions of Henry de Beaumont, was involved in like calamities and diſgrace. While the queen-dowager and Mortimer retained their influence, the claims of theſe two barons were altogether overlooked: But within forty-eight hours after the execution of Mortimer, a peremptory demand was made by Edward III. to have their inheritance reſtored.

"The demand was unexpected and alarming. Made at the very moment of the fall of Iſabella and Mortimer,

Scotland. infantry, and 400 men at arms. Edward would not permit them to enter Scotland by the uſual way, as he himſelf did not yet chooſe openly to take part in their quarrel. For this reaſon they were obliged to take ſhipping, and landed at a place called *Ravenſhare*, *Ravenſpur*, or *Ravenſburgh*, at the mouth of the Humber (H). Randolph, having intelligence of the Engliſh preparations, had marched an army to the frontiers of Eaſt Lothian; but, being afterwards informed of the naval armament, he marched northwards; but died at Muſſelburgh, ſix miles eaſt of Edinburgh, on the 20th of July 1332. With him died the glory of Scotland. The earl of Marr, a man whoſe only merit conſiſted in his being related to the royal family, was choſen to ſucceed him in the regency.—Edward, in the mean time, fell upon a moſt curious expedient to ſhow the juſtice of his cauſe. In March 1332, he had publiſhed a prohibition for any perſon to infringe the treaty of Northampton. The diſinherited lords had been ſuffered to embark, expreſsly for the purpoſe of invading Scotland, after this prohibition was publiſhed. *After they were gone*, Henry de Percy was empowered to puniſh thoſe who ſhould preſume to array themſelves in contempt of his prohibition; and becauſe he underſtood that the Scots were arming in order to repel thoſe invaders whom Edward had indirectly ſent againſt them, he empowered Henry de Percy to arm againſt them.

205 Randolph the regent dies.

206 Baliol lands at Kinghorn, and defeats the Scots. On the 31ſt of July, Edward Baliol and his aſſociates landed in the neighbourhood of Kinghorn, on the Forth; routed the Earl of Fife, who oppoſed them; and marched next day to Dunfermline. Having then ordered his fleet to wait for him at the mouth of the Tay, he proceeded northwards, and encamped on the Miller's acre at Forteviot, with the river Earn in front. Nothing, however, could be more dangerous than his ſituation at preſent, and his deſtruction would have been inevitable. The earl of Marr was encamped with a numerous army on the oppoſite bank of the river Earn, in the neighbourhood of Duplin; and another, nearly as numerous had advanced from the ſouth, through the Lothians and Stirlingſhire, and fixed its quarters at Auchterarder, eight miles to the weſt of Forteviot. Hiſtorians differ as to the number of the two armies. Fordun ſays, that the regent had with him 30,000 men, and the earl of March as many; and that Baliol had between 500 and 600 men at arms, that is, horſemen completely armed. Hemingford reckons each of the Scots armies at 40,000, and Baliol's at 500 armed men. Knyghton ſays, that Baliol, when he landed in Fife, had 300 armed men, and 3000 more of different ſorts; but that he had in all only 2500 men in his camp at Earn. In this deſperate ſituation, the Engliſh general formed a deſign of attacking the Scots in their camp. They were directed to a ford by Andrew Murray of Tullibardine. The Scots kept no watch, but abandoned themſelves to intemperance and riotous mirth; while their enemies, led by Alexander Moubray, croſſed the river at midnight. They aſcended a riſing ground, came unperceived on the right flank of the Scottiſh army, and made a dreadful ſlaughter. At the firſt attack, young Randolph haſted with 300 men at arms to oppoſe the enemy; and being ſeconded by Murdoch earl of Menteith, Alexander Fraſer, and Robert Bruce natural ſon to the late king, he gave a check to the Engliſh, and maintained the combat on equal terms. But now the regent himſelf, along with the whole multitude ruſhed forward to battle without the leaſt order: ſo that while the hindmoſt preſſed on, the foremoſt were thrown down, trodden upon, and ſuffocated. The ſlaughter laſted many hours, and the remains of this vaſt army were utterly diſperſed. Many men of eminence were killed; among whom were Donald earl of Marr, author of the whole cataſtrophe; Thomas earl of Moray, Murdoch earl of Menteith, Robert earl of Carrick, Alex-

Scotland. 207 In the utmoſt danger in the neighbourhood of Duplin.

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and in behalf of men who had loudly proteſted againſt the treaty of Northampton, it indicated a total and perilous change in the ſyſtem of the Engliſh.

"Randolph, of late years, had beheld extraordinary viciſſitudes in England. The D'Eſpenſers alternately perſecuted and triumphant, and at length abaſed in the duſt. The fugitive Mortimer elevated to ſupreme authority, victorious over the princes of the bloody-royal, and then dragged to a gibbet. Hence it was natural for Randolph to wiſh, and even to look, for ſome new revolution, which might prove more favourable to the Scottiſh intereſts. Meanwhile, with great reaſon and good policy, he delayed the reſtitution of the inheritances claimed under the treaty of Northampton, in behalf of the avowed oppoſers of that treaty.

"Beſides, it was neceſſary for Randolph to be aſſured that the Engliſh, while they urged the performance of one article of that treaty, did, on their part, ſincerely purpoſe to perform its more important articles, by continuing to acknowledge the ſucceſſion in the houſe of Bruce, and the independency of the Scottiſh nation.

"Of this, however, there was much reaſon to doubt. For the Engliſh king had taken Baliol under his protection, and had granted him a paſſport to come into England, with permiſſion to reſide there during a whole year (10th October 1330). Theſe things had no friendly or pacific appearance.

"Be this as it will, the event too fatally juſtified the apprehenſions of Randolph; for, while Edward III. was demanding reſtitution of the eſtates reſerved by the treaty of Northampton, his ſubjects were arming in violation of that treaty.

"It is remarkable, that, on the 24th March 1331-2, Edward appears to have known of the hoſtile aſſociation of the diſinherited barons. His words are, 'Quia ex relatu accepimus plurimorum, quod diverſi homines de regno noſtro, et alii (meaning Baliol and his attendants), pacem inter nos, et Robertum de Brus, nuper Regem Scotorum, initam et confirmatam infringere machinantes, diverſas congregationes hominum ad armo indies faciunt, et, *per marchias regni noſtri, dictam terram* Scotiæ, *ad eam modo guerrino impugnandum, ingredi intendunt*;' *Foedera*, T. iv. p. 511. And yet, on the 22d April following he demanded reſtitution of the inheritance of lord Wake, one of the barons in arms;" *Foedera*, T. iv. p. 518.

(H) This place does not now exiſt; having been overwhelmed by the ſea many centuries ago.

Scotland. Alexander Fraſer, and Robert Bruce. The ſlaughter of the infantry and of the men at arms was very great; the moſt probable accounts make it 2000 men at arms, and upwards of 13,000 common ſoldiers. The loſs of the Engliſh was inconſiderable.

208 Farther ſucceſs of Baliol. The day after this victory, Baliol took poſſeſſion of Perth; and, apprehending an attack from the earl of March, cauſed the ditch to be cleared, and the town to be fortified with palliſadoes. The firſt information which the earl received of this dreadful defeat was from a common ſoldier, who fled from the place mortally wounded. When this poor wretch came up, he had time to do no more than to ſhow his wounds; after which he fell down and expired. On his arrival at the field of battle, he found a dreadful confirmation of the intelligence given by the ſoldier; but inſtead of taking his meaſures with any prudence, he and his men hurried on headlong to Perth, actuated only by a blind impulſe to revenge. At firſt they deſigned to aſſault the place; but their hearts failing them, they next determined to reduce it by famine. This, however, could not be done unleſs the Scots were maſters at ſea. One John Crab, a Flemiſh engineer (who had diſtinguiſhed himſelf by deſtroying the famous engine called the *ſow* at the ſiege of Berwick), had continued for many years to annoy the Engliſh on the eaſtern coaſts. After the blockade of Perth was formed, he came with ten veſſels to the mouth of the Tay, where the Engliſh fleet was, and took the ſhip belonging to Henry de Beaumont; but ſoon after all his ten veſſels were

209 He is crowned king of Scotland. burnt by the Engliſh in a general engagement. After this the blockade of Perth was raiſed, the earl of March diſbanded his army, and Edward Baliol was crowned king of Scotland at Scone, on the 24th of September 1332.

The new monarch was no ſooner put in poſſeſſion of the kingdom, than he left Perth in the hands of the earl of Fife, while he himſelf repaired to the ſouthern parts of the kingdom. But the party of king David was far from being extinguiſhed. Baliol was ſcarce gone, when the town of Perth was ſurpriſed, and its fortifications razed, by James Fraſer, Simon Fraſer, and Robert Keith. The earl of Fife was made priſoner, with his family and vaſſals. Andrew Murray of Tullibardine, who had directed the Engliſh to a ford on the river Earn, was put to death as a traitor. Such of the Scots as ſtill adhered to the intereſt of their infant prince, choſe Sir Andrew Murray of Bothwell regent. He was a brave and active man, but had not as yet ſufficient force to attempt any thing conſiderable.

210 His ſhameful behaviour. In the mean time, Baliol behaved in a moſt ſcandalous manner. At Roxburgh, he made a ſolemn ſurrender of the liberties of Scotland; acknowledged Edward for his liege-lord; and, as if this had not been ſufficient, he became bound to put him in poſſeſſion of the town, caſtle, and territory of Berwick, and of other lands on the marches, extending in all to the yearly value of 2000l. "on account," as the inſtrument bears, "of the great honour and emoluments which we have procured through the *ſufferance* of our lord the king, and by the powerful and acceptable aid which we have received from his good ſubjects." He alſo proffered to marry the princeſs Johanna, whom he conſidered as only betrothed to David Bruce, and to add 500l. to her jointure; and this under the penalty of 10,000l. to be appropriated as a portion to the young lady, or otherwiſe diſpoſed of for her behoof. He further engaged to provide for the maintenance of David Bruce as the king of England ſhould adviſe; and, laſtly, he became bound to ſerve Edward in all his wars, excepting in England, Wales, and Ireland, for the ſpace of a year together, with 200 men at arms, and all at his own charges; and he bound his ſucceſſors to perform the like ſervice with 100 men at arms. But afterwards Edward having engaged to maintain him on the throne of Scotland, Baliol bound himſelf to ſerve him in all his wars whatever.

Though the greateſt part of the nation ſubmitted to this ſhameful treaty, it rouſed the indignation of thoſe who wiſhed well to the liberties of their country. John, the ſecond ſon of Randolph, now earl of Moray by the death of his brother; Archibald, the youngeſt brother of the renowned Douglas; together with Simon Fraſer, aſſembled a body of horſemen at Moffat in Annandale; and, ſuddenly traverſing the country, aſſaulted Baliol unexpectedly at Annan. His brother Henry made a gallant reſiſtance for ſome time; but was at laſt overpowered with numbers, and killed, together with ſeveral other perſons of diſtinction. Baliol himſelf eſcaped almoſt naked, with ſcarce a ſingle attendant, and fled to England. After his departure, the Scots began to make depredations on the Engliſh frontiers. Edward iſſued a proclamation, in which he ſolemnly averred, that the Scots, by their hoſtile depredations, had violated the peace of Northampton. Baliol, in the mean time, being joined by ſome Engliſh barons, returned to Scotland; took and burnt a caſtle where Robert de Colville commanded; and, eſtabliſhing his quarters in the neighbourhood of Roxburgh, began to make preparations for beſieging Berwick. Juſt after his arrival, Archibald Douglas, with 3000 men, invaded England by the weſtern marches, plundered the country, and carried off much booty; in revenge for which, Sir Anthony de Lucy made an inroad into Scotland, defeated and took priſoner Sir William Douglas, celebrated in hiſtory by the appellation of *the knight of Liddeſdale*, whom Edward cauſed to be put in irons. About the ſame time, Sir Andrew Murray the regent attacked Baliol, with a view to diſcomfit him before the reinforcements which he expected out of England could arrive. A ſharp conflict enſued at Roxburgh, in which the regent, attempting to reſcue a ſoldier, was taken priſoner: and thus Scotland was at once deprived of its two ableſt commanders.

211 Baliol ſurpriſed, and driven out of Scotland

212 The Scots regent defeated and taken priſoner.

Archibald Douglas was now declared regent; and Edward prepared to invade Scotland, in order to take vengeance on its inhabitants, as he ſaid, for the wrongs they had done, and to ſeek ſuch redreſs as might ſeem good to himſelf. He ordered poſſeſſion to be taken of the iſle of Man in his own name; and ſoon after made it over to Sir William de Montague, who had ſome claim of inheritance in it. The chief deſign of Edward in this expedition, however, was to obtain poſſeſſion of the town of Berwick, which had been already ceded to him by Baliol. This appeared to the Scots a place of no leſs importance than it did to Edward; and therefore they took all the precautions in their power to prevent the loſs of it. The earl of March was appointed to command the caſtle, and Sir Wil-

213 Berwick beſieged by the Engliſh.

Scotland.

Scotland. William Keith the town. The Scots made an obſtinate defence; yet it was evident that they muſt ſoon have yielded if they had not been relieved. At length the regent, with a numerous army, appeared in the neighbourhood. He endeavoured to convey ſuccours into the town, or to provoke the enemies to quit the advantage of the ground, and engage in battle. But all his efforts were in vain; the Engliſh obſtructed every paſſage, and ſtood on the defenſive.

214 The Scots invade Northumberland in vain. The regent then entered Northumberland, waſted the country, and even aſſaulted Bamborough caſtle, where Philippa the young queen of England had her reſidence. He fondly imagined that Edward III. would have abandoned the ſiege of Berwick, after the example of his father, in circumſtances not diſſimilar. Edward nevertheleſs perſevered in his enterpriſe.

During a general aſſault, the town was ſet on fire, and in a great meaſure conſumed. The inhabitants having experienced the evils of a ſiege, and dreading the worſe evils of a ſtorm, implored the earl of March and Sir William Keith to ſeek terms of capitulation. A truce was obtained; and it was agreed, that the town and caſtle ſhould be delivered up on terms fair and honourable, unleſs ſuccours arrived before the hour of veſpers on the 19th July.

It was ſpecially provided, "that Berwick ſhould be held as relieved, in caſe 200 men at arms, in a body, ſhould force their paſſage into the town."

By the treaty, Sir William Keith was permitted to have an interview with the regent. He found him with his army in Northumberland; urged the neceſſity of his return; and ſhowed him, that Berwick, if not inſtantly relieved, was loſt for ever. Perſuaded by his importunities, the regent reſolved to combat the Engliſh, and either to ſave Berwick or loſe the kingdom.

215 The Scots reſolve to come to an engagement.

On the afternoon of the 19th of July, the regent prepared for battle. He divided his army into four bodies. The firſt was led by John earl of Moray, the ſon of Randolph; but as he was young and inexperienced in war, James and Simon Fraſer, ſoldiers of approved reputation were joined with him in the command. The ſecond body was led by the ſteward of Scotland, a youth of 16, under the inſpection of his uncle Sir James Stewart of Roſyth. The third body was led by the regent himſelf, having with him the earl of Carrick and other barons of eminence. The fourth body, or reſerve, appears to have been led by Hugh earl of Roſs.

The numbers of the Scottiſh army on that day are variouſly reported by hiſtorians. The continuator of Hemingford, an author of that age, and Knyghton, who lived in the ſucceeding age, aſcertain their numbers with more preciſion than is generally required in hiſtorical facts.

The continuator of Hemingford minutely records the numbers and arrangement of the Scottiſh army. He ſays, that, beſides earls and other lords or great barons, there were 55 knights, 1,100 men at arms, and 13,500 of the commons lightly armed, amounting in all to 14,655. Scotland.

With him Knyghton appears to concur, when his narrative is cleared from the errors of ignorant or careleſs tranſcribers.

It is probable, however, that the ſervants who tended the horſes of perſons of diſtinction, and of the men at arms, and the uſeleſs followers of the camp, were more numerous than the actual combatants.

The Engliſh were advantageouſly poſted on a riſing ground at Halydon, with a marſhy hollow in their front. Of their particular diſpoſition we are not informed, further than that Baliol had the command of one of the wings.

It had been provided by the treaty of capitulation, "That Berwick ſhould be conſidered as relieved, in caſe 200 men at arms forced their paſſage into the town." This the Scottiſh men at arms attempted; but Edward, aware of their purpoſe, oppoſed them in perſon, and repulſed them with great ſlaughter. The Scottiſh army ruſhed on to a general attack; but they had to deſcend into the marſhy hollow before mounting the eminences of Halydon. After having ſtruggled with the difficulties of the ground, and after having been inceſſantly galled by the Engliſh archers, they reached the enemy. Although fatigued and diſordered in their ranks, they fought as it became men who had conquered under the banners of Robert Bruce. The Engliſh, with equal valour, had great advantages of ſituation, and were better diſciplined than their antagoniſts. The earl of Roſs led the reſerve to attack in flank that wing where Baliol commanded; but he was repulſed and ſlain. There fell with him Kenneth earl of Sutherland, and Murdoch earl of Menteith. 216 Battle of Halydon.

In the other parts of the field, the events were equally diſaſterous. The regent received a mortal wound, and the Scots everywhere gave way. In the field, and during a purſuit for many miles, the number of ſlain and priſoners was ſo great, that few of the Scottiſh army eſcaped. 217 The Scots defeated, and the regent killed.

Beſides the earls of Roſs, Sutherland, and Menteith, there were among the ſlain Malcolm earl of Lenox, an aged baron; he had been one of the foremoſt to repair to the ſtandard of Robert Bruce, and his laſt exertions were for his country; Alexander Bruce earl of Carrick, who atoned for the ſhort defection from the family of his benefactor; John Campbell earl of Athole, nephew of the late king; James Fraſer, and Simon Fraſer; John de Graham, Alexander de Lindeſay, Alan Stewart, and many other perſons of eminent rank.

The ſteward had two uncles, John and James. John was killed, and James mortally wounded and made priſoner (1).

The regent, mortally wounded, and abandoned on the field of battle, only lived to ſee his army diſcomfited and himſelf a priſoner.

This victory was obtained with very inconſiderable loſs

(1) *Fordun*, l. xiii. c. 28, relates, that Sir James Stewart was ſlain; the Engliſh hiſtorians, that he was mortally wounded and made priſoner. It may be remarked, that at Halydon, two Stewarts fought under the banner of their chiefs; the one Alan of Dreghorn, the paternal anceſtor of Charles I. and the other James of Roſyth, the paternal anceſtor of Oliver Cromwell.

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loſs. It is related by the Engliſh hiſtorians, that, on the ſide of their countrymen, there were killed one knight, one eſquire, and 12 foot-ſoldiers. Nor will this appear altogether incredible, when we remember, that the Engliſh ranks remained unbroken, and that their archers, at a ſecure diſtance, inceſſantly annoyed the Scottiſh infantry.

218 Berwick ſurrenders, and almoſt all Scotland ſubmits.

According to capitulation, the town and caſtle of Berwick ſurrendered. The Engliſh king took twelve hoſtages, for ſecuring the fidelity of the citizens of Berwick.

Thus was the whole of Scotland reduced under the ſubjection of Baliol, excepting a few fortreſſes; ſo that it became neceſſary to provide for the ſafety of the young king and queen. Accordingly, they were conveyed to France, where they were honourably entertained. Meanwhile, Baliol employed himſelf in making new conceſſions to his liege-lord Edward; and in 1334 the work of ſubmiſſion was completed by a ſolemn inſtrument drawn up by Baliol, in which he ſurrendered great part of the Scottiſh dominions, to be forever annexed to the crown of England. In this inſtrument Baliol ſaid, that "he had formerly become bound to make a grant to Edward of lands on the marches, to the amount of *two thouſand-pound lands*; that the Scottiſh parliament had ratified his obligation; and that he had accordingly ſurrendered Berwick and its territory; and now, for completely diſcharging his obligation, he made an abſolute ſurrender to the Engliſh crown of the foreſts of Jedburgh, Selkirk, and Ettrick; of the counties of Roxburgh, Peebles, and Dumfries; together with the county of Edinburgh, and the conſtabularies of Linlithgow and Haddington." This extraordinary ſurrender was made with ſo much precipitation, that Baliol forgot to except his own private eſtate out of it. This, however, was generouſly reſtored to him by Edward; who proclaimed, that, "having already received ſatisfaction in full, he had too much reverence for God, juſtice, and good faith to man, to allow the ceſſion to be prejudicial to the private rights of the king of Scots." At the ſame time Baliol preſented himſelf before his liege-lord; did homage, and ſwore fealty, "for the whole kingdom of Scotland and the iſles adjacent."

219 Mean ſubmiſſions of Baliol.

220 A quarrel among the Engliſh diſinherited lords.

A quarrel now aroſe among the diſinherited lords, to whom this revolution had been owing, which produced the worſt conſequences to the intereſt of Baliol. The brother of Alexander de Moubray died, leaving daughters, but no iſſue-male. Moubray having claimed a preference to the daughters of his brother, Baliol countenanced his ſuit, and, as it appears, put him in poſſeſſion of the inheritance. Henry de Beaumont earl of Buchan, and David de Strathbolgie or Hallings, earl of Athol, eſpouſed the cauſe of the heirs-general; but perceiving that their ſolicitations were not heard, they left the court in diſguſt, and retired to their caſtles about the end of Auguſt 1334. Baliol ſoon perceived his error in offending theſe two powerful lords; and in order to regain their favour, diſmiſſed Moubray, and conferred on David de Strathbolgie the whole eſtates of the young ſteward of Scotland. Thus he alienated the affections of Moubray, and added to the power of the earl of Athol, who was by far too powerful before.

About this time Sir Andrew Murray of Bothwell, having regained his freedom, began to aſſemble the friends of liberty, and was unanimouſly joined by Moubray. In a moment every thing was in confuſion. Geoffray de Moubray, governor of Roxburgh, revolted; Henry de Beaumont was beſieged in his caſtle of Dunbarg by Murray and Moubray, and forced to ſurrender, but obtained liberty to depart into England. Richard Talbot, endeavouring to paſs into England with a body of troops, was defeated and taken priſoner by Sir William Keith of Galſton. The ſteward of Scotland, who had lain concealed in the iſle of Bute ever ſince the battle of Halidon, now paſſed over to the caſtle of Dunbarton, which was one of the few forts remaining to king David. With the aſſiſtance of Dougal Campbell of Lochow, he made himſelf maſter of the caſtle of Dunoon in Cowal. His tenants of the iſle of Bute attacked and ſlew Alan de Lile the governor, and preſented his head to their maſter. John the ſon of Gilbert, governor of the caſtle of Bute, was made priſoner in the action. He ordered the garriſon to ſurrender, and attached himſelf to the Scottiſh intereſt. Encouraged by theſe ſucceſſes, the ſteward entered his ancient inheritance of Renfrew, and compelled the inhabitants to acknowledge the ſovereignty of David. Godfrey de Roſs, the governor of Ayrſhire, ſubmitted to the Steward. The earl of Moray returned from France, whither he had fled after the battle of Halidon, and was acknowledged regent along with the ſteward. The earl, having raiſed a body of troops, marched againſt the earl of Athol, compelled him to retire into Lochaber, and at laſt to ſurrender; after which he embraced the party of the conquerors. Baliol was now obliged to retire again into England, in order to ſolicit aſſiſtance from Edward; and this was readily granted. Edward himſelf took the field at a very unfavourable ſeaſon for military enterpriſes. His army was divided into two parts. With the one Edward waſted Lothian, while Baliol did the like in Annandale with the other; and, in the mean time, Patrick earl of March, notwithſtanding the unfavourable poſture of affairs, renounced the allegiance he had ſworn to England. His motive for this was, that though the kings of England had maintained him in an independency dangerous to Scotland, he was aſſured that they would never permit him to become formidable in a country which they themſelves poſſeſſed.

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221 Baliol's party every where defeated.

222 He retires into England, and obtains the aſſiſtance of Edward.

223 Lochleven caſtle unſucceſsfully beſieged by the Engliſh.

The year 1335 is remarkable for the ſiege of Lochleven caſtle by the Engliſh, under John de Strivelin. This fort was built on a ſmall iſland, and very difficult of acceſs. The Engliſh commander erected a fort in the cemetery of Kinroſs; and at the lower end of the lake, from whence runs the ſtream called *the Water of Leven*, he raiſed a ſtrong and lofty bulwark, by means of which he hoped to lay the iſland under water, and oblige the garriſon to ſurrender. But four of the Scotch ſoldiers, having found means to approach the bulwark undiſcovered, pierced it ſo dexterouſly, that the waters, ruſhing out with a prodigious force, overflowed part of the Engliſh camp; and the garriſon, ſallying out during the confuſion occaſioned by this unexpected inundation, ſtormed and plundered the fort at Kinroſs. At this time the Engliſh commander, with many of his ſoldiers, happened to be abſent at Dunfermline, celebrating the feſtival of St. Margaret. On his return, he ſwore that he would never deſiſt till he

Scotland. he had taken the place, and put the garriſon to the ſword; however, his utmoſt efforts were at laſt baffled, and he was obliged, notwithſtanding his oath, to deſiſt.

In the mean time, the regents aſſembled a parliament at Dairſy, near Cupar in Fife; but no plan of defence could be fallen upon, by reaſon of the animoſities and factions which prevailed among the barons. Through the mediation of the French, ſome terms of peace were propoſed; but being rejected by the Engliſh, Edward again invaded Scotland, cruelly ravaging the country with one army, while Baliol and the earl of Warrenne did the ſame with another. Soon after this invaſion, count Guy of Namur landed at Berwick with a conſiderable number of men-at-arms in the ſervice of the Engliſh. He advanced to the neighbourhood of Edinburgh; but was defeated and taken priſoner by the earls of March and Moray, and Sir Alexander Ramſay. In this engagement, one Richard Shaw, a Scottiſh eſquire, was ſingled out by a combatant in the army of count Guy, and both pierced each other with their ſpears; the ſtranger being ſtripped, was diſcovered to be a woman. The earl of Moray treated Guy with the greateſt reſpect, not only allowing him and the remainder of his troops to depart from Scotland without moleſtation, but even attending him to the borders, accompanied by William Douglas and his brother James. On his return, William de Preſſen, warden of the caſtle and foreſt of Jedburgh, attacked and defeated his party; James Douglas was killed, the earl himſelf taken priſoner, and carried into England.

224 Count Guy of Namur defeated and taken priſoner.

225 The Scots regent taken priſoner, in conſequence of which a ſhameful treaty is concluded with England.

Thus was the Scottiſh nation once more reduced to the brink of ruin. Alexander de Mowbray, Geffrey de Mowbray, and ſome others, pretending powers from "the earl of Athol and Robert the Steward of Scotland," concluded a treaty with Edward at Perth; the ſubſtance of which was, that all the Scots ſhould receive pardon, and have their fees, lands, and offices reſtored, excepting thoſe who by *common aſſent* in parliament ſhould be excluded. The liberties of the church and the ancient laws and uſages of Scotland were to remain in full force. All offices were to be filled with Scotſmen, excepting that the king ſhould appoint whom he pleaſed within his regalities.

226 The earl of Athol defeated and killed.

The earl of Athol now began to perſecute with the utmoſt fury thoſe who wiſhed well to the cauſe of Scotland. With 3000 men he beſieged the caſtle of Kildrommey, which had hitherto been the great refuge of king David's party. Sir Andrew Murray of Bothwell reſolved at all events to attempt the reſcue of his wife and family, who were ſhut up in this caſtle. With 1100 men he ſurpriſed Athol in the foreſt of Kilblain. The earl's men, ſeized with a panic, fled and diſperſed themſelves; on which their commander, refuſing to accept of quarter, was killed. Sir Andrew Murray then aſſembled a parliament at Dunfermline, where he was immediately appointed regent.

227 Edward again invades Scotland.

In 1336, the king of England perceiving that the Scots were taken under the patronage of France, reſolved to invade their country, and cruſh them at once before they could have any aſſiſtance from their new allies. In this expedition he penetrated as far as Inverneſs; but the Scots, commanded by Sir Andrew Murray, avoided coming to a general action; ſo that Edward could not effect any thing of conſequence. The inhabitants of Aberdeen attacked one Thomas Roſheme, who had landed at Dunottar. They were defeated; but Roſheme fell in the action. Edward chaſtiſed the vanquiſhed ſeverely for their temerity, and laid the town in aſhes. He then began to repair the caſtles whoſe fortifications had been demoliſhed by king Robert. He put in a ſtate of defence the caſtles of Dunottar, Kinclevin, Lawrieſton, Stirling, Bothwell, Edinburgh, and Roxburgh; greatly augmented the fortifications of Perth, and left a conſiderable body of troops in the place. The Scots began to reduce theſe caſtles as ſoon as Edward was departed; and in 1337, under Sir Andrew Murray, invaded Cumberland. No great exploits, however, were now performed on either ſide. Edward being employed in preparations for invading France, had little leiſure to attend to the affairs of Scotland; and the Scots, divided among themſelves, and deſtitute of thoſe leaders under whom they had acquired ſo much glory, could not now annoy their enemies as formerly. The moſt remarkable tranſaction was the ſiege of the caſtle of Dunbar, belonging to the earl of March. The Engliſh commander was the earl of Saliſbury. The earl of March was abſent; but his wife, the daughter of Randolph, from her complexion commonly called *Black Agnes*, undertook to defend it in her huſband's abſence. The Engliſh again employed that huge machine called *a ſow*, formerly mentioned in our account of the ſiege of Berwick: it met with the ſame fate now as at that time; an huge ſtone, let fall upon it from the top of the walls, cruſhed it to pieces. The Engliſh, baffled in every attack, turned the ſiege into a blockade; but Sir Alexander Ramſay having found means to enter it with 40 reſolute men, the garriſon made a ſally, and cut in pieces the advanced guard of the enemy. The Engliſh, diſheartened by ſo many misfortunes, abandoned the enterpriſe.

228 Dunbar caſtle unſucceſsfully beſieged by the Engliſh.

In 1338, Sir Andrew Murray the regent died, and was ſucceeded in his office by Robert the Steward of Scotland. In 1339 he reduced the town of Perth and the caſtle of Stirling; and gained over to the Scottiſh intereſt William Bullock, governor of the caſtle of Coupar: after which, having expelled the enemy from every poſt to the northward of the Forth, he employed himſelf in ſettling the affairs of the nation as well as he could.

229 Exploits of Robert the Steward.

In 1341, the caſtle of Edinburgh was ſurpriſed by a device of Sir William Bullock. According to his appointment, one Walter Currie of Dundee privately received into his ſhip the knight of Liddeſdale, with William Fraſer, Joachim of Kinbuck, and 200 reſolute men. Currie caſt anchor in Leith road, pretending to be an Engliſh ſhipmaſter, who had a cargo of wine and proviſions, with which he propoſed to furniſh the commander of the caſtle. His barrels and hampers were brought to the caſtle gate, and ſuddenly thrown down in ſuch a manner as to obſtruct the ſhutting of it. Currie and his men then ſlew the centinels; and the knight of Liddeſdale, with a party who lurked in the neighbourhood, ruſhed in, overpowered the garriſon, and made themſelves maſters of the place.—On the 4th of March this year, the king and queen arrived from France, and landed at Inverbervie in Kincardineſhire.

230 Edinburgh caſtle ſurpriſed by Sir William Bullock.

231 King David arrives in Scotland.

In 1342, Sir Alexander Ramſay took the ſtrong fortreſs of Roxburgh; for which important ſervice the king beſtowed on him the charge of ſheriff of Teviotdale, at that

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that time held by William Douglas knight of Liddesdale. The king's liberality proved fatal to Ramſay: for from that time Douglas became his implacable and inveterate enemy; and having, after a pretended reconciliation, unexpectedly ſurpriſed him with three of his friends, he put them inſtantly to death, carrying off Ramſay himſelf to his caſtle of the Hermitage, where he cauſed him to be ſtarved to death in a moſt barbarous manner. The unhappy man was confined in a room, over which was an heap of wheat; a few grains of which were let fall every day through a hole, not as many as would ſupport life, but as would protract it for a time, and make him longer ſenſible of the agonies of hunger; and in this miſerable ſituation he ſurvived 17 days. About the ſame time Sir William Bullock was put to death by Douglas in a ſimilar manner; nor was King David at that time in a capacity to puniſh ſuch atrocious cruelties committed by ſo powerful a ſubject.

232 Miſerable end of Alexander Ramſay and Sir William Bullock.

233 David invades England, and behaves with the utmoſt cruelty.

In the mean time, David having raiſed a powerful army, prepared to take a ſevere revenge of the Engliſh, from whom he had ſuffered ſo much. Edward was at that time in France, but commanded Baliol to raiſe all the militia beyond the Trent: which order, however, produced but little effect; ſo much was this mean-ſpirited prince deſpiſed by the Engliſh. David invaded Northumberland without oppoſition, and ravaged the country; but was obliged to raiſe the ſiege of Newcaſtle, which was commanded by Sir John Nevil, an excellent officer. David, exaſperated at this repulſe, entered the biſhopric of Durham, which he ravaged in the moſt cruel manner. However, on the approach of Edward with a powerful army, the Scots thought proper to retire; and a two years truce was agreed upon.

234 Other invaſions.

This pacification was but ſhort-lived. In 1345 the Scots again prepared to invade England, while Edward took all neceſſary meaſures for oppoſing them: however, this year the Scots were ſucceſsful, ravaging Weſtmoreland, and burning ſeveral towns. The year ended with a new truce between the two nations; and hoſtilities were not renewed till 1346, when David entered England with an army of 50,000 men. His firſt exploit was the taking of the fortreſs of Liddel, and maſſacring all whom he found in it. The commander, Sir Walter Selby, capitulated with a Scots knight for his life; but the bargain being diſapproved of by David, he ordered two of Selby's ſons to be ſtrangled in his preſence, and then the father's head to be cut off. From thence the Scots marched to Lancroft, which they plundered; then paſſing into Northumberland, they pillaged the priory of Hexham, but ſpared the town, that it might ſerve as a magazine. Three other towns, Corbridge, Durham, and Darlington, were ſpared for the ſame reaſon. In his march to Durham, it is ſaid that he would have made the county a deſert, had not ſome of the monks paid him a contribution of a thouſand pounds to ſpare their eſtates: however, according to Knyghton, every Engliſhman who fell into David's hands was put to death, unleſs he could redeem his life by paying three pence.

235 Monſtrous cruelty of David.

To put a ſtop to the cruelties of this barbarous invader, the queen of England, in her huſband's abſence, aſſembled a powerful army, which was divided into four bodies; the firſt commanded by Lord Henry Percy; the ſecond by the archbiſhop of York; the third by the biſhop of Lincoln, the lord Moubray, and Sir Thomas Rokeby; and the fourth and principal diviſion was headed by Edward Baliol.—The king of Scotland headed a choſen battalion, compoſed of the flower of his nobility, and the auxiliaries with which he had been ſupplied by France. The high ſteward of Scotland headed the ſecond line; and the third was commanded by the earls of Moray and Douglas. While the Engliſh were approaching, Lord Douglas and Sir David Graham ſkirmiſhed with them, but were defeated with the loſs of 500 of their men; which ſeemed an omen of the diſaſter that was about to enſue. The general engagement began between the archers on both ſides; but the Engliſh being much ſuperior in the uſe of the bow, the ſteward of Scotland advanced to the relief of his countrymen. The Engliſh archers, unable to bear his attack, fell back upon Lord Henry Percy's diviſion, which was thus put in confuſion, and would have been totally defeated, had not Baliol advanced to their relief with a body of 4000 horſe. The ſteward was then obliged to retire; by which means the flank of that diviſion commanded by David, and which was then engaged with another line of the Engliſh, was left expoſed to an attack. Baliol perceived the advantage; and, without purſuing the ſteward, attacked the king's diviſion, which was immediately cut in pieces or diſperſed. David was left with about 80 noblemen and gentlemen, but ſtill maintained the fight with obſtinacy; nor would he yield even when wounded in the head with an arrow, expecting every moment to be relieved by the ſteward and that line of his army which was ſtill entire under the Lords Moray and Douglas. At laſt finding himſelf totally overpowered, he attempted to retreat, but was overtaken by a party under one John Copeland. This captain, endeavouring to ſeize the king, had two of his teeth ſtruck out by a blow of his gauntlet; but at laſt, finding it in vain to reſiſt, the king was obliged to give up his ſword and ſurrender himſelf a priſoner.—After he was taken, Baliol attacked and totally routed that diviſion of the Scottiſh army which had hitherto remained entire under the Lords Moray and Douglas. In this battle the Scots loſt a great number of their nobility, and 15,000 common ſoldiers. Many perſons of the firſt diſtinction were alſo taken along with the king; and had it not been that the eſcape of the Scots was favoured by the avarice of the Engliſh ſoldiers, who neglected the purſuit in order to plunder, ſcarce a ſingle Scotſman would have returned.

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236 The battle of Durham.

237 The Scots defeated, and their king taken priſoner.

King David, after this unfortunate battle, was carried to the caſtle of Bamborough, where he was kept with ſo much privacy, that for ſome time it was not known where he was, or that he had been taken priſoner. As ſoon as the truth was known, the queen of England demanded the royal priſoner from Copeland; but the latter poſitively refuſed to part with him even to the queen, unleſs ſhe could produce an order to that purpoſe under Edward's hand and ſeal. This reſolute behaviour was reſented by the queen, and a complaint made to the king; in conſequence of which Copeland was ſummoned to appear before Edward, after having reſigned David to the cuſtody of Lord Nevil. The Engliſh monarch, at that time in France, approved of all that he had done, rewarded him with 500 l. a year, and ſent him back to England with the honour of

238 Account of king David after the battle.

Scotland. knighthood. David was then eſcorted by Copeland, attended, it is ſaid, by 20,000 men, from the caſtle of Ogle in Northumberland, till the Lord Nevil, by indenture, delivered him into the hands of Sir Thomas Rokeby, ſheriff of Yorkſhire. In the ſame pompous manner he was conducted all the way to London, which he entered on a black courſer. He was received in the capital with the greateſt ſolemnity by the lord mayor and other magiſtrates, the city-companies under arms lining all the ſtreets through which he paſſed, the houſes loaded with ſpectators, who expreſſed a generous concern for his captivity. Being arrived at the Tower, he was delivered, by indenture likewiſe, to the cuſtody of the conſtable, the Lord John Darcy, on the 2d of January 1347.

239 Baliol makes another attempt on the crown of Scotland.

Baliol now, encouraged by the misfortune of his rival, made an effort once more to eſtabliſh himſelf on the throne of Scotland; and before the end of the year reduced the caſtles of Hermitage and Roxburgh, the foreſt of Ettric, the Merſe, with the counties of Annandale, Teviotdale, and Tweeddale. The Scots continued faithful to the cauſe of their king, notwithſtanding his misfortune, and choſe the Steward for the guardian of the kingdom. He behaved with a prudence equal to the high ſtation he filled: nevertheleſs the progreſs of Baliol was ſo rapid, that it is ſcarcely probable he could have maintained his ground, had not Edward again conſented to a truce; which, however, ſeems to have been ill obſerved on the part of the Scots. In fact, though both Scots and Engliſh hiſtorians are ſilent as to particulars, we find, that about the end of the year 1348, all Scotland was recovered out of the hands of the Engliſh; excepting Berwick, Roxburgh, Hermitage, and Lanric, which was part of Baliol's hereditary eſtate, and defended by him with an army. The Scots hiſtorians inform us, that the Engliſh, in revenge for the damages done to their country by the breach of the peace, proclaimed a tournament and other military exerciſes at Berwick, to which they invited the Scots; but in their way thither the latter fell into an ambuſcade, and were all cut in pieces.

240 The Scots recover the greateſt part of their country.

241 Scotland infeſted with a dreadful plague.

The years 1349 and 1350 were remarkable only for a dreadful plague which invaded Scotland, after having ravaged the continent of Europe. According to Fordun, one-third of the people of Scotland periſhed at this time. The patient's fleſh ſwelled exceedingly, and he died in two days illneſs; but the mortality chiefly affected the middling and lower ranks of people. The ſame dreadful calamity continued throughout the years 1351 and 1352; occaſioning a ceſſation of arms not only in Scotland, but throughout all Europe.

All this time king David remained a priſoner in England; for though ſeveral treaties had been propoſed, they had hitherto come to nothing, becauſe the Engliſh monarch inſiſted upon being indemnified for the ravages the Scots had committed in his territories. At laſt it was agreed, that the king of Scotland ſhould be immediately ſet at liberty, on paying 90,000 merks for his ranſom, by equal proportions, within the ſpace of nine years: That 10,000 merks, being the firſt proportion, ſhould be paid at the feaſt of Candlemas next to come, the ſecond at Candlemas 1357, and ſo on till complete payment ſhould be made of the whole: That, during the ſaid ſpace of nine years, there ſhould be a truce between the two kingdoms: That 20 Scots gentlemen, of the beſt families in the kingdom, ſhould remain in England as hoſtages and ſureties for the ſaid ſum; and that, if any part thereof was not paid at the preciſe time appointed, then David ſhould remain a priſoner in England till it was paid; or, if he was detained by any juſt cauſe, that the lord high ſteward, the lord Douglas, John of the Iſles, and others of the higheſt rank, ſhould come and ſupply his place. Scotland.

242 Terms propoſed for releaſe of the Scottiſh monarch.

These terms were rejected by the Scots nobility, and, in 1355, war was recommenced with England, at the inſtigation of France, who ſent 40,000 crowns to Scotland as a ſupply for defraying the expences.

243 Rejected by the nobility, and war recommenced.

With this ſum the guardian, having raiſed an army, once more took the field; but not before the Engliſh had deſtroyed the Lothians and Douglaſdale. A battle was fought on Neſbit-moor: in which the Engliſh being drawn into an ambuſcade, were totally defeated. The next attempt of the Scots was againſt the town of Berwick, which they deſigned to ſurpriſe by an eſcalade. They met, however, with ſuch a vigorous reſiſtance, that many perſons of diſtinction were killed. However, the attack proved ſucceſsful; but the acquiſition was of no great importance as the caſtle ſtill held out. Edward, in the mean time, hearing of the loſs of the town, hurried back from France to London. Here he ſtaid but three days, and marched northward to raiſe the ſiege. He reached Durham on the 23d of December 1355, where he appointed all his military tenants to meet him on the 1ſt of January 1356. On the 14th of the ſame month he arrived before Berwick, which was inſtantly retaken; but the Scots were allowed to depart for their own country. The reduction of this place produced an extraordinary effect: for Baliol now perceiving that Edward meant not to eſtabliſh him on the throne of Scotland, but to retain in his own poſſeſſion as many places of that country as he could, came at laſt to the reſolution of giving up to the king of England the whole of Scotland. This indeed was no more than a form, becauſe at that time he was not poſſeſſed of the kingdom. However, the ceremony was performed at Roxburgh; and Baliol preſented his crown and ſome earth and ſtones by way of inveſtiture. Baliol in return was to have a revenue of 2000 pounds a-year; and as Edward was at the head of an excellent army, he had little doubt of being able to force the Scots to ſubmit.

244 Berwick taken by the Scots.

245 Retaken by Edward.

246 Baliol reſigns the kingdom of Scotland to Edward.

The affairs of Scotland were now in a very critical ſituation; and it was neceſſary to gain time. For this reaſon Edward was amuſed with a negociation; and to this he the more willingly liſtened, as he was at that time waiting for his fleet, from which he had great expectations. A little time, however, diſcovered the deceit. The Sots plainly told Edward, that they would die rather than ſubmit to his demands; and he, in return threatened a moſt dreadful revenge. His fleet in the mean time arrived in the Frith of Forth; the mariners deſtroyed and pillaged all that was within their reach, without ſparing even the ſacred edifices, carrying off the ſtatues of the bleſſed virgin, loading the monks with chains, and committing every thing in thoſe days called impiety and ſacrilege. Edward had by this time marched as far as Haddington, but was obliged to receive proviſions all the way from his fleet; for the Scots had deſolated the country through which he paſſed. During his march his army was haraſſed, and his

247 Who makes a furious invaſion.

Scotland.

his foragers cut off, ſo that he was reduced to diſtreſs; and at laſt his fleet being totally deſtroyed by a ſtorm, he was obliged to return to England without accompliſhing any thing.

248 But is obliged to return without accompliſhing any thing.

In the mean time the prince of Wales, who had been left by his father to carry on the war in France, defeated and took priſoner John king of France, at the battle of Poictiers. In this battle were 3000 Scots, who had gone over as auxiliaries to the French monarch, and who ſuffered extremely. However, the ſucceſs of Edward, inſtead of rendering him haughty, ſeemed to have a contrary effect; and, by the mediation of Pope Innocent, a truce for two years was concluded with France, in which the Scots were comprehended. During this interval the ranſom of the king of Scots was ſettled at 100,000 merks, to be paid in ten years; for which 20 hoſtages were to be given as formerly. In conſequence of this treaty, David at laſt obtained his liberty in 1358; and Edward laid aſide all hopes of ever ſubduing Scotland. As for Baliol, he was now ſunk in oblivion; and it is not known what became of him, or when he died.

249 David obtains his liberty.

David, though now reſtored to liberty, found himſelf greatly embarraſſed with the payment of ſuch a large ſum as had been ſtipulated for his ranſom; the kingdom of Scotland being then in a moſt miſerable and exhauſted ſituation. After ſending his queen, and going into England himſelf, he could obtain no greater favour than a reſpite of a few months for the payment of the ſecond moiety; ſo that he was a laſt conſtrained to aſk aſſiſtance from France. This could ſcarcely be expected in the diſtreſſed ſituation of that kingdom; however, it was at laſt agreed, that 50,000 marks ſhould be paid to Scotland, in caſe the Scots would conſent to renew the war the following year. Neither party, however, kept their word; and David, being ſtill greatly diſtreſſed about the remainder of his ranſom, at laſt entered into a very extraordinary negociation with Edward, by which he conſented that the king of England ſhould be his ſucceſſor to the throne of Scotland. But this negociation was defeated through the invincible hatred which the Scots bore to an Engliſh governor. David then, being entirely unable to diſcharge the remainder of his ranſom, was obliged to enter into a new treaty; by which the kingdom of Scotland became indebted to Edward the ſum of 100,000 pounds ſterling, to be paid by equal proportions within the ſpace of 25 years, during which there ſhould be a truce between the two nations.

250 Is embarraſſed by the payment of his ranſom.

Scotland.

251 Enters into a new treaty with Edward.

From this time we meet with little more of any moment in the reign of king David. After the death of his queen Johanna, the ſiſter of Edward, he married a Scots woman, of mean birth, named Margaret Logie; but by neither of his wives had he any children. Queen Margaret he divorced, on what pretence is not known; however, ſhe left the kingdom, and complained perſonally to the Pope, who treated her as David's lawful wife, and enjoined her huſband to receive her as ſuch under the moſt ſevere penalties. What effect theſe threats had on the king is not known; but it is certain that Margaret never returned to Scotland; and, on the 22d of February 1371, David himſelf died, leaving the kingdom to his nephew Robert Stewart, the firſt of that family who ſat on the throne of Scotland (K)

252 He dies, and is ſucceeded by Robert Stewart.

Some

(K) Concerning the origin of the Stewart family, we have the following account by the Scots hiſtorians. Fleance, the ſon of the celebrated Banquo, after his father's murder by Macbeth, fled into Wales, where he had a ſon named *Walter*, by a princeſs of that country. After the reſtoration of Malcolm Canmore, this Walter returned to Scotland, where he was promoted to the high ſtewardſhip, a dignity held by ſervice, and which intitled the poſſeſſor to all the privileges of a baron. Walter was now diſtinguiſhed, from this office, by the title of *Walter the Stewart*, which deſcended to his poſterity; and *Steward*, afterwards *Stewart*, or *Stuart*, became their ſurname.

On this ſubject Lord Hailes has the following remarks. "Our hiſtorians have recorded the achievements of Walter the Steward of Scotland in the reign of Malcolm III. He is ſaid to have been the father of Alan, and the grandfather of that Walter who was indeed Stewart of Scotland in the reign of David I. and Malcolm IV. It may perhaps be aſcribed to ſtrange prejudices, or to a ſpirit of ſcepticiſm, when I declare, that hitherto I have ſeen no evidence that ſuch a perſon as Walter Stewart of Scotland, in the reign of Malcolm III. did ever exiſt.

"We are gravely told, 'That Walter the ſon of Fleance, the ſon of Banquo, Thane of Lochaber, having killed a man at the court of Griffith, prince of Wales, fought refuge with Edward the Confeſſor; and having killed another man at Edward's court, ſought refuge with Alan the Red, earl of Brittany: That, on the Norman invaſion, he came to England with the earl of Brittany, and ſignalized himſelf at the battle of Haſtings in 1066: That the earl of Brittany, by his firſt wife Emma, daughter of Siward earl of Northumberland, had an only child Chriſtina; and that he beſtowed her in marriage on the young hero." This is the ſtory which, after various improvements ſince the days of Boece, has had the good fortune to obtain credit.

"That Walter, before he had well attained to the age of manhood, ſhould have ſlain two men in private quarrels, is a circumſtance improbable, yet poſſible; and therefore I object not to it. But his alliance with the earl of Brittany cannot be ſo eaſily admitted.

"Alan, ſurnamed *le Roux*, a younger ſon of Eudo earl of Brittany, was one of the gallant adventurers who came over with William the Conqueror; *he had neither territories nor court.* The hiſtorians of Brittany poſitively aſſert that he had no children. Beſides, it is hard to ſay by what accident Alan *le Roux* ſhould have become acquainted with Emma the daughter of Siward earl of Northumberland! I ſuppoſe that our hiſtorians invented this alliance, in order to ſtrengthen the connection between Walter the Stewart and Malcolm III.

"According

Scotland. Some authors tell us, that at the acceſſion of Robert II. his title was diſputed by William earl of Douglas. If any ſuch claim was preferred, an aſſembly of the States ſet it aſide, and it was reſolved that Robert ſhould be crowned at Scone; and to take away for the future all diſputes concerning the ſucceſſion, a particular act was framed, by which the kingdom was ſecured to Robert and his heirs.

The new king being thus eſtabliſhed on the throne, endeavoured to renew the war with the Engliſh, in order to recover from them the town of Berwick, and ſome other places on the borders. In this, however, he failed; and as 56,000 pounds of David's ranſom ſtill remained unpaid, Robert bound himſelf to diſcharge it at the rate of 4000 marks every midſummer. He then propoſed an alliance with France; but the terms demanded by that kingdom being, that Scotland ſhould be obliged to make war with England whenever France ſhould require it, Robert could not by any means be induced to conſent to ſuch a requiſition, which would have obliged him to break through the moſt ſolemn treaties, whenever the king of France ſhould think proper to break with England. A new treaty, there-

253 Treaty with France.

fore, was entered into, by which it was provided, Scotland. that neither Scotland nor France ſhould be obliged to make war with England; and by another clauſe, that the diſpenſation or authority even of the pope himſelf ſhould never free the kings or kingdoms of France and Scotland from the obligations they lay under to aſſiſt one another, as often as required, in oppoſition to the kingdom of England. In caſe of a competition for the crown of Scotland, the king of France and his heirs were to take care that no Engliſh influence was uſed; but that the matter being by the greateſt and beſt part of the nation decided conformably to the laws and eſtabliſhments of Scotland, he ſhould with all his power defend and aſſiſt the perſon ſo eſtabliſhed. Laſtly, it was agreed that no Frenchman ſhould ever henceforth ſerve for wages, or otherwiſe, againſt Scotland, nor any Scotſman againſt France.

254 War betwixt the Scots and Engliſh borderers.

This laſt article occaſioned a recal of all the Scots from the Engliſh armies, which Edward looked upon to be a prelude to an invaſion. He accordingly iſſued writs for aſſembling all the militia in the north of England. At this time an invincible hatred ſubſiſted between the neighbouring people of both nations, which extended

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"According to one account, the genealogies of their families ſtand thus:

Siward earl of Northumberland *.

Emma=Alan earl of Brittany.	Another daughter=Duncan king of Scots.
Chriſtina=Walter the Stewart.	Malcolm III.

"Thus Walter the Stewart and Malcolm III. were couſins-german.

"According to another account, the genealogy of their families ſtands thus:

Siward Earl of Northumberland.	His ſiſter=wife of Duncan.
Emma=Alan Earl of Brittany.	Malcolm III.
Chriſtina=Walter the Stewart.	

"Thus the mother of Walter the Stewart and Malcolm III. were couſins-german.

"It is ſaid that, 'Walter the Stewart had a ſon, Alan, alſo Stewart of Scotland.' The evidence of this is to be found in a charter granted by Earl Goſpatrick, and in another charter granted by his ſon Waldeve Earl of March, at Dunbar. In them Alden, or Aldan Dapifer, is mentioned as a witneſs; that is, ſay our antiquaries, *Allan, the Stewart of Scotland.*

"This is the fundamental propoſition on which the genealogy of the houſe of Stuart, as it is commonly underſtood, may be ſaid to reſt. It will be remarked, that this hypotheſis takes it for granted, that *Alden* or *Aldan*, and *Alan*, are the ſame; upon what authority I know not. The Alden mentioned in the two charters ſeems to have been the ſtewart of Earl Goſpatrick, and of Earl Waldeve, not the ſtewart of Scotland.

To the charter by Earl Goſpatrick, there are eight witneſſes: 'Andrew the arch-deacon,; Adam his brother; Nigel the chaplain; Ketel the ſon of Dolphin; Ernald; *Alden the Stewart* (Dapifer); Adam the ſon of Alden; Adam the ſon of Goſpatrick.' Is it poſſible for credulity itſelf to believe, that the *Alden* placed ſo low in ſuch company, was *the high ſtewart of Scotland*, a man at leaſt as honourable as Goſpatrick himſelf? I can have no doubt, that the witneſſes to this charter were the dependents or houſehold-ſervants of Earl Goſpatrick; and that if we interpret *Nigellus Capellanus* to be *Nigel the earl's chaplain*, we muſt interpret *Aldenus Dapifer* to be *Alden the earl's ſtewart.*

"To the charter granted by Earl Waldeve, there are nine witneſſes. *Alden Dapifer* is the ſeventh in order. There are only three among them who ſeem to have been landed men: 'Elias de Hadeſtandena (probably Haſſenden),

* There was a certain princeſs of Denmark who brought forth a ſon to a *bear*. This ſon was called *Bern*, and natural enough like, had ears like a bear. He was the father of Siward earl of Northumberland. *Brompton*, p. 915. ap. Twiſden.

Scotland. extended not only through the lower ranks, but had pervaded the higher claſſes alſo. The inhabitants of the borders, indeed, paid very little regard to the orders of their reſpective ſovereigns; ſo that daily hoſtilities were committed by them upon each other when there was peace between the ſovereigns. The inhabitants of theſe countries had eſtabliſhed with one another certain conventions, which have ſince been collected, and go by the name of the *Border-laws*. The families of Douglas and Piercy, whoſe eſtates lay contiguous to one another, were at perpetual variance. It had been common for the borderers of both kingdoms, during a truce, to frequent each others fairs; and a ſervant of the earl of March had been killed in a fray at that of Roxburgh, which was ſtill in the hands of the Engliſh. Juſtice for this murder was demanded from lord Percy; but he ſlighted the complaint. On this the earl of March, with his brother the earl of Moray, aſſembling their followers, entered the next fair that was held in Roxburgh, plundered and burnt the town, and killed all the Engliſh who fell into their hands. The Engliſh borderers were ordered to lay waſte the lands of the earl of March; but, in their way thither, deſtroyed the eſtate of Sir John Gordon, a man of great property in the ſouth of Scotland. Sir John in his turn invaded England, from whence he drove off a large booty in cattle, and a number of priſoners. In his retreat he was attacked by a body of freſh troops under Sir John Liſburn, at a place called *Caram*. An obſtinate encounter followed. The Scots were five times repulſed; but at laſt they renewed the charge with ſuch fury, that they made Liſburn, his brother, and ſeveral other perſons of diſtinction, priſoners, together with all their ſurviving ſoldiers. On this Lord Percy with 7000 men encamped at Duns, in the ſouth of Scotland; but was obliged to retire, probably for want of ſubſiſtence for his army. In the mean time, Muſgrave, the governor of Berwick, who had been ordered to join Percy with a detachment from the garriſon, was on his march intercepted, defeated, and taken priſoner by Sir John Gordon; after which the border war became general on both ſides. The iſſue of theſe diſturbances is but little known; however, in 1377, we find them raging with more violence than ever. The fair of Roxburgh was once more the ſcene of action, and the town was again burnt down by the Scots. Lord Percy, who was now earl Scotland.

Haſſenden), William de Copland, and William de Hellebat (q. Elbottle); all the three are placed before *Alden Dapifer*.

"It has been remarked, 'That in thoſe days the title of *ſtewart* or *dapifer* was too high a title to be given to the retainer of an earl.' I anſwer, that the Saxon Chronicle, *anno* 1093, ſays, 'Morael of Boebbahurh was thaes eorles *ſtiward*,' i. e. Morel of Bamborough was this earl's *ſtewart*, or the ſtewart of Robert earl of Northumberland. Beſides, to a charter granted by Earl Goſpatrick the Elder, *Lambertus Dapifer* is a witneſs. If *Lambertus Dapifer*, in a charter of Goſpatrick the Elder, implies *Lambert the ſtewart of the family of March*, why ſhould *Aldenus Dapifer*, in the charters of the ſon and grandſon of Goſpatrick, imply *the ſtewart of Scotland?*

"I believe that no defender of the common hypotheſis will anſwer this objection, by pretending that *Lambertus Dapifer* was indeed *ſtewart of Scotland*. Such an anſwer would leave no room for Walter ſtewart of Scotland, who is held to have been a diſtinguiſhed perſonage in the reign of Malcolm III.

"It is curious to ſee upon what ſlight grounds our antiquaries have eſtabliſhed the connection between *Aldenus Dapifer* and the houſe of Stewart. *Walterus filius Alani* appears to have flouriſhed in the reign of David I. In the reign of Malcolm IV. he is termed *Dapifer*. Hence it has been raſhly concluded, that *Walterus Dapifer filius Alani* was the ſon of that *Aldenus Dapifer* who is a witneſs to the charters of Goſpatrick and Waldeve.

"I perſuade myſelf, that *Alden Dapifer*, and *Alen the father of Walter* ſtewart of Scotland, in the reign of Malcolm IV. were different perſons; and that they had nothing in common but the chriſtian name, if indeed they had that in common.

"Some of my readers may demand, '*Who* then was Alen the father of Walter, ſtewart of Scotland in the reign of Malcolm IV.?'

"I can only anſwer this queſtion by demanding, '*Who* was the father of Martach Earl of Marre in the reign of Malcolm III.; of Gilchriſt Earl of Angus in the reign of Alexander I.; of Fergus Lord of Galloway in the reign of Malcolm IV.; or of Friſkinus de Moravia, anceſtor of the family of Sutherland, in the reign of William the Lion? Or, to keep in the ſuppoſed line of the royal family of Stewart, '*Who* was the father of Banquho Thane of Lochaber?'

"Many anſwers may no doubt be made to this laſt queſtion. Kennedy ſays, that the father of Banquho was one of the ſeven ſons of Core king of Munſter; Sir George M'Kenzie, Of Ferquhard, the ſon of Kenneth III.; and Simpſon, The ſon of Ferquhard Thane of Lochabar, the ſon of Kenneth, the ſon of Murdoch, the ſon of Doir, the ſon of Eth king of Scotland.

"It is remarkable, that Abercrombie relates all thoſe contradictory ſtories, without ever ſuſpecting the natural inference ariſing from them, 'That if noble perſons are not ſatisfied with a long pedigree, proved by authentic inſtruments, they muſt believe in flattering and ignorant fictions; and that if they ſcorn to wait for the dawn of record to enlighten their deſcent, they muſt bewilder themſelves in dark and fabulous genealogies.'

"In the reign of David I. before the middle of the 12th century, the family of the Stewarts was opulent and powerful. It may therefore have ſubſiſted for many ages previous to that time; but when, and what was its commencement, we cannot determine."

Scotland. earl of Northumberland, reſolved to take ſignal vengeance. He ravaged the Scots borders, particularly the earl of March's eſtate, for three days, at the head of 10,000 men. Some time after this, the Scots inſurgents became powerful enough to ſurpriſe Berwick; which, however, was quickly retaken by the Engliſh, who ſoon after invaded Scotland. In this expedition, however, they ſucceeded ſo ill, that Percy thought proper to deſiſt from his expedition. The Scots in the mean time began hoſtilities by ſea, under one Mercer, an experienced ſailor; but he had the misfortune to be taken priſoner by the Engliſh, with all his fleet. In 1379, England was afflicted with a dreadful plague, of which the Scots took advantage to invade the country. The Engliſh hiſtorians tell us that they behaved with the utmoſt barbarity, killing and plundering the defenceleſs inhabitants without mercy.

255 Berwick taken and retaken.

This predatory war continued, generally to the diſadvantage of the Engliſh, till the beginning of November 1380, when a truce was concluded, to continue for a year; which, however, related only to the borders. This truce, like the others, was but very indifferently obſerved; ſo that, in 1383, new negociations were ſet on foot: but, in 1384, the war was renewed with greater fury than ever. In the ſpring, the earls of March and Douglas took the caſtle of Lochmaben, and intercepted a rich convoy which the Engliſh were ſending to Roxburgh; burnt to the ground the caſtle of Wark, and committed ſuch devaſtations in the north of England, that ſeveral gentlemen offered to reſign their eſtates to king Richard, becauſe they were not able to defend them againſt the Scots. The duke of Lancaſter entered Scotland at the head of an army; but the inhabitants had removed every thing valuable, ſo that he marched on to Edinburgh without accompliſhing any thing of conſequence. On his return he was haraſſed by flying parties of Scots, who deſtroyed a conſiderable number of his men. This year alſo the French ſent a body of auxiliaries into Scotland. The earls of Northumberland and Nottingham entered Scotland with an army of 10,000 horſe and 6000 archers; but retired, after having committed ſome devaſtations in the ſouthern counties. The Scots revenged themſelves by laying waſte all the northern part of England to the gates of Newcaſtle. Berwick was taken by the Scots, and ſoon after ſurrendered for the ſum of 2000 marks. A truce was then, as uſual, concluded; but in the mean time king Robert was meditating a moſt ſevere blow againſt the Engliſh.

236 Formidable invaſion of England projected.

The Duke of Burgundy having come to the poſſeſſion of the eſtate of his father-in-law the earl of Flanders, claimed the ſovereignty of the town of Ghent; but they refuſed to ſubmit to him, and in this refuſal were protected by king Richard II. of England. On this the duke of Burgundy propoſed to the French court to invade England in concert with the Scots.—This being agreed to, a fleet was fitted out at Sluys; on board of which John de Vienne, the French admiral, embarked, carrying along with him 50,000 pounds in gold, which the duke of Burgundy advanced in order to be diſtributed in Scotland, where the admiral arrived ſafe with a conſiderable reinforcement, together with ſupplies of all kinds of military ſtores. Two thouſand auxiliaries, of whom 500 were men-at-arms, arrived with this fleet; and 400 ſuits of complete armour were brought along with them, in order to be diſtributed among the braveſt of the Scots. Scotland.

257 But comes to nothing.

The Scots were for a ſhort time elated with the great attention which had been paid them by the French king; but, in the mean time, the Flemings having revolted, the French abandoned the Scots to ſuſtain the whole weight of the Engliſh reſentment, that they themſelves might employ their arms in Flanders. King Richard took the field with a more numerous army than had ever been muſtered in England before. Hoſtilities were begun by the Scots, who, according to cuſtom, invaded the northern parts of England, and carried off a conſiderable booty: however, in their retreat, they were in the utmoſt danger of being cut off by the duke of Lancaſter, who had been ſent with an army to intercept them. The Engliſh army proceeded northwards; but could accompliſh nothing, on account of the country being deſolated, till they came to Edinburgh, which they laid in aſhes. Being, however, inceſſantly haraſſed by parties of the enemy, they were obliged to retreat.

Nothing remarkable happened till the year 1387, when, after a ſhort truce, the war was renewed with freſh fury. Northumberland and Weſtmoreland were ravaged by the earls of Fife and Douglas, and Lord Nithdale defeated a body of 3000 Engliſh; after which he formed the plan of invading Ireland, the inhabitants of which had of late been very active againſt the Scots. In 1388, Douglas obtained permiſſion to raiſe a body of forces for this invaſion; and having landed in ſafety, defeated the Iriſh, plundered the town of Carlingford, and loaded fifteen ſhips with the booty. From thence the Scots ſailed to the iſle of Man, which in like manner was plundered and laid waſte; after which they returned with their booty to Loch Rian in Scotland.

258 England invaded by two Scots armies at once.

Encouraged by this ſucceſs, Robert determined to proceed on a more enlarged plan. Having aſſembled a parliament at Aberdeen, a double invaſion of England was reſolved upon. Two armies were raiſed; the one, conſiſting of 25,000 men, commanded by the earls of Mentieth and Fife, Douglas lord of Galloway, and Alexander Lindſay; the other army, conſiſting of the like number, was commanded by the earls of Douglas, March, Crawford, Moray, the lord high Conſtable of Scotland, and other perſons of diſtinction. The former entered Cumberland, and the latter Northumberland, both which countries they laid waſte, and both armies were to meet within ten miles of Newcaſtle. The Engliſh were thrown into the greateſt conſternation. Newcaſtle was defended by the earl of Northumberland, whoſe age and infirmities rendered him incapable of taking the field; but his place was abundantly ſupplied by his two ſons Henry and Ralph, the former of whom is known in Engliſh hiſtory by the name of *Hotſpur*. The town was garriſoned by the flower of the Engliſh nobility and gentry, as well as the inhabitants of the adjacent countries, who had fled thither for refuge. Douglas ſelected 2000 foot and 300 horſemen out of the two armies, and encamped on the north ſide of the town, with a view, according to the Scots hiſtorians, of ſtorming it next day. In the mean time, he was challenged by Hotſpur to fight him hand to hand, with ſharp ground ſpears, in ſight of both armies. Douglas accepted the challenge, and Percy was unhorſed the firſt encounter, and obliged to take refuge within the port-

259 Single combat between earl Douglas and Henry Percy.

Scotland.

portcullis or gate of the town; from whence Douglas brought off his antagonist's lance, with a pennon affixed to it, and swore in his hearing that he would carry it into Scotland. Next day Douglas attempted to storm the town; but, being repulsed in the attack, he decamped in the night. Percy, breathing furious revenge, pursued and overtook the Scots at Otterburn. His arrival was quite unexpected, so that the principal commanders of the Scottish army were sitting down to supper unarmed. The soldiers, however were not unprepared for battle; but in the hurry necessarily attending a surprise of this kind, Douglas forgot to put on his cuirass. Both leaders encouraged their men by the most animating speeches; and both parties waited for the rise of the moon, which happened that night to be unusually bright. The battle being joined on the moon's first appearance, the Scots began to give ground; but, being rallied by Douglas, who fought with a battle-ax, the English, though greatly superior in number, were totally routed. Twelve hundred were killed on the spot; and 100 persons of distinction, among whom were the two Percies, were made prisoners by Keith marischal of Scotland. On the side of the Scots the greatest loss was that of the brave earl Douglas, who was killed in consequence of going to battle without his armour, as above related. It was this single combat between Douglas and Percy, and the subsequent battle, which gave rise to the celebrated ballad of Chevy Chace.

260 Battle of Otterburn.

261 The English defeated, and earl Douglas killed.

In the mean time the bishop of Durham was marching towards Newcastle with an army of 16,000 men; but was informed by the runaways of Percy's defeat, which happened on the 21st of July 1388. In a council of war it was resolved to pursue the Scots, whom they hoped easily to vanquish, as being wearied with the battle of the preceding day, and laden with plunder. The earl of Moray, who commanded in chief, having called a consultation of his officers, resolved to venture a battle. The prisoners were almost as numerous as the whole Scots army; however, the generals required no more of them than their words of honour that they should continue inactive during the battle, and remain prisoners still. This condition being complied with, the Scots drew out their army for battle.—Their rear was secured by marshes, and their flanks by large trees which they had felled. In front, their appearance was so formidable, that the English, dreading to encounter a resolute enemy so strongly posted, retired to Newcastle, leaving the Scots at liberty to continue their march to their own country.

Robert being now oppressed with age, so that he could not longer endure the fatigues of government, the administration was devolved upon his second son the earl of Fife; for his eldest son was by nature indolent, and besides lame by an unlucky blow he had received from a horse. Early in the spring of 1389, he invaded England with success: but the same year a truce was concluded, to last from the 19th of June 1389 to the 16th of August 1392; in which the states of both crowns were included. This truce was violently opposed by the nobility, who suspected their king of being too much under French influence. Upon this the court of France thought proper to send over ambassadors to persuade the nobility to comply; informing them, that in case of a refusal, they could stop the [illegible] assistance either of men or money from the continent. [illegible] Wallace's glory thus revived, and peace between England and Scotland was once more restored. Scotland, however, was this time disturbed, when the peace of the nation was most fondly believed by Robert's third son the earl of Buchan. This prince having a quarrel with the bishop of Murray, burnt down the fine cathedral of Elgin, which has been called by historians the lanthorn and ornament of the north of Scotland. The king for this crime caused his son to be imprisoned; and a civil war would have been the consequence, had it not been for the veneration which the Scots retained for their old king. However, they did not long enjoy their beloved monarch; for he died on the 19th of April 1390, in the 75th year of his age, and the 19th of his reign.

Robert II. dies, and is succeeded by his son Robert III.

On the death of Robert II. the crown devolved upon his eldest son John; but the name being thought unlucky in Scotland, he changed it for that of Robert, though he was still called by the commonalty *Robin John Cummin*. He had been married to Annabella, the daughter of Sir John Drummond, an ancestor to the noble family of Perth; and was crowned along with his consort at Scone, on the 13th of August 1390. He confirmed the truce which had been entered into with England, and renewed the league with France; but the beginning of his reign was disturbed by the wars of the petty chieftains with each other. Duncan Stewart, son to Alexander earl of Buchan, who had died in prison for burning the cathedral of Elgin, assembling his followers under pretence of revenging his father's death, laid waste the county of Angus. Walter Ogilvy, the sheriff of Angus, attempting to repel the invaders, was killed, with his brother and 60 of their followers. The king then gave a commission to the earl of Crawford to suppress them; which he soon did, and most of them were either killed or executed. The followers of the earl of Buchan were composed of the wildest Highlanders, distinguished by the title of *Caterans*, which answers to that of banditti. That such a race of people existed is certain from the records of Scotland; but it is not easy to determine how they obtained their subsistence, being void of the knowledge of agriculture and of every civil art. There is some reason to believe that many of them came from the Western Isles; and that they or their ancestors had emigrated from the eastern parts of Ireland. The lands they inhabited were never cultivated till towards the middle of the last century; and, according to the most authentic accounts, they lived entirely upon animal food.

Robert, duke of Albany, and the earl of Buchan, created constables of France.

A combat between the Clan Chattan and Clan Kay.

The earl of Crawford's success against the followers of Buchan encouraged Robert to intrust him with a commission for suppressing other insurgents by whom the peace of the country was disturbed. The most remarkable of these were the *Clan Chattan* and *Clan Kay*. As both these tribes were numerous and brave, Crawford was not without apprehensions that they might unite against him as a common enemy, and defeat him if attempted to suppress them by force. He proposed, therefore, that the two rival clans should each choose 30 men, to determine their differences by the sword, without being allowed the use of any other weapon. The king and his nobility were to be spectators of the combat; the conquered clan were to be pardoned for all their former offences, and the conquerors honoured with

Scotland. with the royal favour. This propoſal was readily accepted by both parties, and the north inch of Perth was to be the ſcene of action. But, upon muſtering the combatants, it was found that one of them, belonging to the clan Chattan, had abſented himſelf. It was propoſed to balance this difference by withdrawing one of the combatants from the clan Kay; but not one of them could be prevailed on to reſign his place. At laſt one Henry Wind, a ſaddler, though no way connected with either party, offered to ſupply the place of him that was abſent, on condition of his receiving a French crown of gold (about 7 s. 6 d. Sterling) which was immediately paid him. The combat then began with incredible fury; but at laſt, through the ſuperior valour and ſkill of Henry Wind, victory declared in favour of the clan Chattan. Only ten of the conquerors, beſides Wynd, were left alive; and all of them deſperately wounded. Of the clan Kay only one remained; and he having received no hurt eſcaped by ſwimming acroſs the Tay.

While theſe internal broils were going on, the truce which had lately been concluded with England was ſo ill obſerved, that it became neceſſary to enter into freſh negociations. Theſe, like others which had taken place before, had very little effect. The borderers on both ſides had been ſo accuſtomed to ravage and plunder, that they could not live in quiet. King Robert alſo was thought to be too much attached to the king of England. He had introduced the new title of *duke*, which he beſtowed firſt on the prince royal; but making an offer of that honour to one of the heads of the Douglas family, it was rejected with diſdain. That powerful family had never loſt ſight of an ancient claim they had upon the caſtle of Roxburgh, which was ſtill in the poſſeſſion of the Engliſh; and this year the ſon of the earl of Douglas, Sir William Stewart, and others, broke down the bridge of Roxburgh, plundered the town, and deſtroyed the forage and corn there and in the neighbouring country. The Engliſh applied for ſatisfaction; but obtained none, as the confuſion which involved the kingdom by the depoſition of Richard II. and the acceſſion of Henry IV. prevented them from having recourſe to arms, the only argument to which the Scots patriots in thoſe days would liſten.

265 Title of Duke introduced into Scotland.

No ſooner was the cataſtrophe of Richard known in Scotland, than they reſolved to avail themſelves of it; and invading the north parts of England, demoliſhed the caſtle of Wark, and laid the neighbouring country under contribution. The ſituation of Henry's affairs did not admit of his reſenting this inſult. He contented himſelf with nominating his brother the earl of Weſtmoreland, to treat with the Scots about a truce or peace; or, if that could not be obtained, to make a mutual agreement, that the towns of Dumfries in Scotland, and Penrith in England, ſhould be free from hoſtilities during the war. To this propoſal the Scots paid no regard; and being encouraged by the court of France, who reſented the depoſition of Richard, they renewed their ravages in England. In 1400, the king of England called a parliament, in order to conſult on the moſt proper means of repelling the Scottiſh invaſions; and in this he was greatly aſſiſted by the diviſions of the Scots among themſelves. The duke of Rotheſay, the heir-apparent of the crown, was now grown up to man's eſtate, and it was thought proper to provide a ſuitable conſort for him. The king is ſaid to have ſcandalouſly put up his ſon's marriage at auction, and offered him to the lady whoſe father could give him the higheſt price. The earl of March was the higheſt bidder; and advanced a conſiderable ſum in ready money, on condition that his daughter ſhould become the royal bride. —This ſordid match was oppoſed by Douglas, who propoſed his own daughter the lady Margery. So degenerate was the court of Scotland at this time, that neither the king nor the duke of Rotheſay oppoſed this propoſal of a new match, becauſe it was to be purchaſed with a freſh ſum; and they even refuſed to indemnify the earl of March for the money he had already advanced.

Scotland. 266 Mercenary behaviour of Robert with regard to his ſon's marriage.

As the duke of Albany ſided with Douglas, a council of the nobility was privately aſſembled, which annulled the contract of the lady Elizabeth Dunbar, the earl of March's daughter, in favour of the lady Margery, daughter to the earl of Douglas; but without taking any meaſures for repaying the money to the earl of March. The continuator of Fordun informs us, that the earl of Douglas paid a larger ſum for his daughter's fortune than that which had been advanced by the earl of March, and that the earl of Douglas's daughter was married to the duke of Rotheſay: that, before the marriage was celebrated, March demanded that the money he had advanced ſhould be reimburſed; but receiving an unſatisfactory anſwer, he declared, that as the king had not fulfilled his bargain, he would bring unexpected calamities upon the country. Accordingly he fled into England, leaving his caſtle of Dunbar to the cuſtody of his nephew Robert Maitland, who ſoon after put it into the hands of the earl of Douglas, called in hiſtory *Archibald the Grim*, from the ſternneſs of his viſage.

267 Earl of March revolts.

As ſoon as Robert heard of the revolt of the earl of March, he ſent ambaſſadors demanding back his ſubject; but the requeſt was diſregarded. On the other hand, the earl of March demanded repoſſeſſion of the caſtle of Dunbar, pleading, that he had committed no act of treaſon, but had come to England under a ſafe conduct from king Henry, on purpoſe to negociate his private affairs: but this requeſt was diſregarded; upon which he ſent for all his family and followers to England, where they joined him in great numbers. This produced a war between the two kingdoms. The earl of March with Henry Percy ſurnamed *Hotſpur*, invaded Scotland, penetrating as far as Haddington, and carrying off great numbers of the inhabitants into captivity. From thence they went to Peebles, and then to Linton, ravaging the country all the way as they paſſed along. They next beſieged the caſtle of Hales, and took ſeveral of the neighbouring forts; but Archibald the Grim, or rather his ſon, having raiſed an army againſt them, they were ſtruck with terror, and fled to Berwick, to the gates of which they were purſued by the Scots. At this time the Scottiſh admiral, Sir Robert Logan, was at ſea with a ſquadron; but miſcarried in an attempt he made upon ſome Engliſh ſhips of war that protected their fleet when fiſhing upon the coaſt of Scotland. After this the Engliſh plundered the Orkney iſlands; which, though belonging

268 Invaſion of Scotland by Henry Percy.

Scotland. ing to the crown of Norway, were at that time governed, or rather farmed, by Sinclair the Scots earl of Orkney and Caithness.

All this time the earl of March continued under the protection of the king of England. He had received repeated invitations to return to his allegiance: but all of them being rejected, he was proclaimed a traitor; and the Scottish governor made a formal demand of him from king Henry. With this the latter not only refused to comply, but renewed his league with the lord of the Isles. He pretended also, that at this time he had intercepted some letters from the Scottish regency, which called him "a traitor in the highest degree;" and he alleged this as a reason why he protected not only the earl of March but the lord of the Isles.

On the 25th of July 1400, the earl of March renounced his homage, fealty, and service, to the king of Scotland, and transferred them to Henry by a formal indenture. For this the earl was rewarded with a pension of 500 merks Sterling, and the manor of Clipestone in Sherwood forest. Henry now began to revive the claim of homage from the kings of Scotland, and even to meditate the conquest of the kingdom. He had indeed many reasons to hope for success; the principal of which were, the weakness of the Scottish government, the divided state of the royal family, and the dissensions among the chief nobility. For this purpose he made great preparations both by sea and land; but before he set out on his journey, he received a letter from the duke of Rothesay, full of reproaches on account of the presumptuous letters which Henry had addressed to Robert and his nobility. The letter was addressed by the duke to his adversary of England, as the Scots had not yet recognized the title of Henry to the crown of England. Towards the end of it the duke, according to the custom of the times, desired Henry, in order to avoid the effusion of Christian blood, to fight him in person with two, three, or an hundred noblemen on a side. But this challenge produced no other answer from Henry, than that "he was surprised that the duke of Rothesay should consider noble blood as not being *Christian*, since he desired the effusion of the one and not of the other." Henry arrived at Leith on the very day in which he had appointed the Scottish nobility to meet him and pay their homage, and conclude a peace between the two crowns. In all probability, he expected to have been joined by great numbers of the discontented Scots; and he flattered the English with a promise of raising the power and glory of their country to a higher pitch than it had ever known. Under this pretext, he seized upon the sum of 350,000 pounds in ready money, besides as much in plate and jewels, which had been left by Richard in the royal treasury. He raised also vast contributions on the clergy and nobility, and likewise on the principal towns and cities. At last, finding that neither his vast preparations, nor the interest of the earl of March, had brought any of the Scots to his standard, he formed the siege of Edinburgh castle, which was defended by the duke of Rothesay, and, as some say, by the earl of Douglas. The duke of Albany, brother to king Robert, was then in the field with an army, and sent a letter to king Henry, promising, that if he would remain where he was for six days, he would give him battle, and force him to raise the siege, or lose his life. When this was written, the duke was at Caldermuir; and Henry was so much pleased with the letter, that he presented the herald who delivered it with his upper garment, and a chain of gold; promising, on his royal word, that he would remain where he was until the appointed day. On this occasion, however, the duke forfeited his honour; for he suffered six days to elapse without making any attempt on the English army. Scotland.

269 Henry IV. projects the conquest of Scotland.

Henry, in the mean time, pushed on the siege of Edinburgh castle; but met with such a vigorous resistance from the duke of Rothesay, that the hopes of reducing it were but small. At the same time he was informed that the Welsh were on the point of rebellion under the famous chieftain named *Owen Glendower*. He knew also that many of the English were highly dissatisfied with his title to the crown; and that he owed his peaceable possession of it to the moderation of the earl of March, who was the real heir to the unfortunate Richard, but a nobleman of no ambition. For these reasons he concluded it best to raise the siege of Edinburgh castle, and to return to England. He then agreed to a truce for six weeks, but which was afterwards prolonged, probably for a year, by the commissioners of the two crowns, who met at Kelso.

270 But fails in his attempt.

In 1401, Scotland suffered a great loss by the death of Walter Trail, the archbishop of St Andrew's, a most exemplary patriot, and a person of great influence. Archibald Douglas the Grim had died some time before, and his loss was now severely felt; for the king himself, naturally feeble, and now quite disabled by his age and infirmities, was sequestered from the world in such a manner, that we know not even the place of his residence during the last invasion of Scotland by the English. This year also queen Annabella died, so that none remained who might be able to heal those divisions which prevailed among the royal family. Robert duke of Albany, a man of great ambition, was an enemy to the duke of Rothesay, the heir-apparent to the crown; and endeavoured, for obvious reasons, to impress his father with a bad opinion of him. This prince, however, appears to have been chargeable with no misdemeanour of any consequence, excepting his having debauched, under promise of marriage, the daughter of William Lindsay of Rossy. But this is not supported by any credible evidence; and, though it had been true, could never justify the horrid treatment he met with, and which we are now about to relate.

271 Conspiracy against the life of Rothesay.

One Ramorgny, a man of the vilest principles, but an attendant on the duke of Rothesay, had won his confidence; and, perceiving how much he resented the conduct of his uncle the duke of Albany, had the villany to suggest to the prince the dispatching him by assassination. The prince rejected this infamous proposal with such horror and displeasure, that the villain, being afraid he would disclose it to the duke of Albany, informed the latter, under the seal of the most inviolable secrecy, that the prince intended to murder him; upon which the duke, and William Lindsay of Rossy his associate in the treason, resolved upon the prince's death. By practising upon the doating king, Lindsay and Ramorgny obtained a writ directed to the duke of Albany, impowering him to arrest his son, and to keep him under restraint, in order for his amendment. The same

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traitors had previouſly poſſeſſed the prince with an apprehenſion that his life was in danger, and had perſuaded him to ſeize the caſtle of St Andrew's, and to keep poſſeſſion of it during the vacancy of that ſee. Robert had nominated one of his baſtard brethren, who was then deacon of St Andrew's, to that biſhopric: but being a perſon no way fitted for ſuch a dignity, he declined the honour, and the chapter refuſed to elect any other during his lifetime; ſo that the prince had a proſpect of poſſeſſing the caſtle for ſome time. He was riding thither with a ſmall attendance, when he was arreſted between the towns of Nidi and Stratirum (according to the continuator of Fordun), and hurried to the very caſtle of which he was preparing to take poſſeſſion.

The duke of Albany, and the earl of Douglas, who was likewiſe the prince's enemy, were then at Culroſs, waiting the event of their deteſtable conſpiracy; of which they were no ſooner informed, than they ordered a ſtrong body of ruffians to carry the royal captive from the caſtle of St Andrew's; which they did, after clothing him in a ruſſet cloak, mounting him on a very ſorry horſe, and committing him to the cuſtody of two execrable wretches, John Selkirk and John Wright, who were ordered by the duke of Albany to ſtarve him to death. According to Buchanan, his fate was for ſome time prolonged by the compaſſion of one of his keeper's daughters, who thruſt thin oat cakes through the chinks of his priſon-walls, and by a woman who, being a wet nurſe, found means to convey part of her milk to him through a ſmall tube. Both theſe charitable females were detected, and put to death; the young lady's inhuman father being himſelf the proſecutor. The prince himſelf died a few days after, on Eaſter-eve, his hunger having impelled him to devour part of his own fleſh.

272 Who is ſtarved to death.

In the mean time, Robert, being yet ignorant of the murder of his ſon, had renewed, or rather conſented to renew, hoſtilities with England. On the expiration of the truce, Henry had ſent a commiſſion to the earls of Northumberland and Weſtmoreland, to offer the Scots any terms they could reaſonably deſire; but every offer of this kind being rejected, there was a neceſſity for renewing hoſtilities. The earl of March had received another penſion from Henry, on condition of his keeping on foot a certain number of light troops to act againſt the Scots. This had been done; and ſo effectually did theſe now annoy their enemies, that the earl of Douglas was obliged to take the field againſt them. By dividing his men into ſmall parties, he repreſſed the depredations of theſe invaders; and Thomas Haliburton, the commander of one of the Scottiſh parties, made incurſions into England as far as Bamborough, from whence he returned with a conſiderable booty. This encouraged another chieftain, Patrick Hepburn, to make a ſimilar attempt: but being elated with his ſucceſs, he remained too long in the enemy's country; ſo that the earl of March had time to ſend a detachment to intercept him on his return. This produced a deſperate encounter, in which Hepburn was killed; the flower of the youth of Lothian, who had attended in this expedition, were cut off, and ſcarce a ſingle Scotſman remained unwounded.

273 A body of Scots cut off by the Engliſh.

On the news of this diſaſter, the earl of Douglas applied to the duke of Albany for aſſiſtance. He was immediately furniſhed with a conſiderable army, according to ſome, conſiſting of 10,000; according to others of 13,000; and according to the Engliſh hiſtorians, of 20,000 men. Murdoc, the ſon of the duke, attended the earl on this expedition, as did alſo the earls of Moray, Angus, Orkney, and many others of the chief nobility, with 80 knights. The Scots on this occaſion conducted themſelves with the ſame imprudence they had done before. Having penetrated too far into the country, they were intercepted by the Engliſh on their return, and obliged to engage at a place called *Homeldon*, under great diſadvantages. The conſequence was, that they were utterly defeated, and almoſt the whole army either killed or taken.

Scotland.

274 Their defeat at Homeldon.

Henry Hotſpur, to whom this victory was chiefly owing, reſolving to purſue the advantage he had gained, entered the ſouthern parts of the kingdom, and laid ſiege to a caſtle called *Cocklawys*, on the borders of Teviotdale. The caſtle was for ſome time bravely defended: but at laſt the governor entered into a treaty, by which it was agreed to deliver up the caſtle, in caſe it was not relieved by the king or governor in ſix weeks; during which time no additional fortifications were to be made. But while the Engliſh were retiring, one of Percy's ſoldiers pretended that the Scots had broke the capitulation, by introducing a mattock into the place. The governor, hearing of this charge, offered to fight any Engliſhman who ſhould engage to make it good. A champion was accordingly ſingled out, but was defeated by the Scotſman; and the Engliſh army retired according to agreement. The matter then being debated in the Scottiſh council, it was reſolved to ſend relief to the caſtle. Accordingly the duke of Albany, with a powerful army, ſet out for the place; but before he came there, certain news were received of the defeat and death of Hotſpur, at Shrewſbury, as related under the article ENGLAND, n° 182.

275 Cocklawys caſtle beſieged by the Engliſh.

In the year 1404, king Henry, exceedingly deſirous of a peace with Scotland, renewed his negociations for that purpoſe. Theſe, however, not being attended with ſucceſs, hoſtilities were ſtill continued, but without any remarkable tranſaction on either ſide. In the mean time, king Robert was informed of the miſerable fate of his eldeſt ſon the duke of Rothſay; but was unable to reſent it by executing juſtice on ſuch a powerful murderer. After giving himſelf up to grief, therefore, for ſome time, he reſolved to provide for the ſafety of his ſecond ſon James, by ſending him into France. This ſcheme was not communicated to the duke of Albany; and the young prince took ſhipping with all imaginable ſecrecy at the Baſs, under the care of the earl of Orkney. On his voyage he was taken by an Engliſh privateer off Flamborough-head, and brought before Henry. The Engliſh monarch having examined the attendants of the prince, they told him that they were carrying the prince to France for his education. "I underſtand the French tongue (replied Henry), and your countrymen ought to have been kind enough to have truſted me with their prince's education." He then committed the prince and his attendants cloſe priſoners to the tower of London. The news of this diſaſter arrived at the caſtle of Rothſay in the iſle of Bute (the place of Robert's reſidence) while the king was at ſupper. The news threw him into ſuch an agony of grief, that he died in three days,

276 The Scottiſh prince, James, ſent to France, but is taken by the Engliſh.

277 Robert dies of grief.

Scotland.

278 The duke of Albany regent.

days, the 29th of March 1405, after having reigned near 15 years.

By the death of Robert, and the captivity of the prince, all the power devolved upon the duke of Albany, who was appointed regent by a convention of the states assembled at Scone. The allegiance of the people, however, to their captive prince could not be shaken; so that the regent was obliged to raise an army for the purpose of rescuing him. Henry summoned all his military tenants, and made great preparations: but, having agreed to treat of a final peace with Ireland and the lord of the Isles, the regent laid hold of this as a pretence for entering into a new negociation with the English monarch; and a truce was concluded for a year during which time all differences were to be settled. In consequence of this agreement, Rothesay, king at arms, was appointed commissary-general for the king and kingdom of Scotland; and in that quality repaired to the court of England. At the time when the prince of Scotland was taken, it seems that there had been a truce, however ill observed on both sides, subsisting between the two nations. Rothesay produced the record of this truce, which provided that the Scots should have a free navigation; and in consequence of this, he demanded justice of the captain and crew of the privateer who had taken the prince. Henry ordered the matter to be inquired into: but the English brought their complaints as well as the Scots; and the claims of both were so intricate, that the examination fell to the ground, but at the same time the truce was prolonged.

279 Schemes of Henry against Scotland.

In the end of the year 1409, or the beginning of 1410, the war was renewed with England, and Henry prepared to strike a fatal blow which he had long meditated against Scotland. He had, as we have seen, entered into a league with the lord of the Isles, where a considerable revolution then happened. Walter Lesley had succeeded to the estate and honours of the earl of Ross, in right of his wife, who was the heir. By that marriage, he had a son named *Alexander*, who succeeded him; and a daughter, Margaret, who was married to the lord of the Isles. This Alexander had married one of the regent's daughters; and dying young, he left behind him an only daughter, Euphane, who was deformed, and become a nun at North Berwick. Her grandfather, the regent, procured from her a resignation of the earldom of Ross, to which she was undoubted heir, in favour of John earl of Buchan, but in prejudice of Donald lord of the Isles, who was the son of Margaret, sister to the earl Alexander, and consequently the nearest heir to the estate after the nun. Donald applied for redress; but this suit being rejected, he, with his brother John, fled into England, where he was most graciously received by king Henry. According to the instructions given him by the English monarch, Donald returned to his own dominions in the Isles, where he raised an army, and passing over into Rossshire, violently seized on the estate in dispute. In a short time he found himself at the head of 10,000 Highlanders; with whom he marched into the province of Moray, and from thence to Strathbogie and Garioch, which he laid under contribution. Advancing towards Aberdeen, with a view to pay his troops with the plunder of that city, which was then a place of considerable trade, he was met by the earl of Marr, whom the regent had employed to command against him, at a village called *Harlaw*, in the neighbourhood of Aberdeen. A fierce engagement ensued, in which great numbers were killed on both sides, and the victory remained uncertain: but Donald, finding himself in the midst of an enemy's country, where he could raise no recruits, began to retreat next day; and the shattered state of the royal army preventing him from being pursued, he escaped to his own dominions, where in a short time he submitted, and swore allegiance to the crown of Scotland.

280 Battle of Harlaw.

In the mean time, Henry continued the war with Scotland, and refused to renew the truce, though frequently solicited by the Scots. He had now, however, sustained a great loss by the defection of the earl of March, who had gone over to the Scots, though the historians have not informed us of his quarrel with the English monarch. On his return to Scotland, he had been fully reconciled to the Douglas family, and now strove to distinguish himself in the cause of his country. This, with the countenance which was shown the Scots by the court of France, a bull published by the pope in their favour, and the vigorous behaviour of the regent himself, contributed to reduce Henry to reason; and we hear of no more hostilities between the two nations till after the death of the English monarch, which happened in the year 1413.

281 The earl of March returns to his allegiance to Scotland.

In 1415, the truce being either broken or expired, the Scots made great preparations for besieging Berwick. The undertaking, however, came to nothing; all that was done during the campaign being the burning of Penrith by the Scots, and of Dumfries by the English. Next year a truce was agreed upon, and a treaty entered into for the ransom of King James; which was so far advanced, that the English king agreed to his visiting Scotland, provided he engaged to forfeit 100,000 pounds Sterling in case of his failure to return by a certain day. For reasons now unknown, this treaty was broken off, and vast preparations were made for a new invasion of Scotland; which, however, was executed with so little success, that it became known among the common people of Scotland by the name of the *fule raid*, or the foolish expedition.

282 Unsuccessful expedition of Henry.

In 1420, died Robert duke of Albany, regent of Scotland, at the age of 80; and such was the veneration which the Scots had for his memory, that his post of regent was conferred upon his eldest son Murdoch, though a person no way qualified for that station.—The war with England was now [illegible]; but in France Henry met with the greatest opposition from the Scots auxiliaries, insomuch, that at last he proclaimed all the Scots in the service of the Dauphin to be rebels against their lawful sovereign, and threatened to treat them as such wherever he found them. It was not long before he had an opportunity of putting this menace in execution; for the town and castle of Melun being obliged through famine to capitulate, one of the articles of capitulation was, that all the English and Scots in the place should be resigned to the absolute disposal of the king of England; and, in consequence of his resolution abovementioned, [illegible] twenty Scots soldiers who were found in the place to be hanged as traitors. In 1421, Henry returned to England, and with him James the Scots king. On his

283 His cruelty to the Scots in France.

Scotland. arrival there, he was informed that the Scots, under the earl of Douglas, had made an irruption into England, where they had burned Newark, but had been forced to return to their own country by a peſtilence, though a new invaſion was daily expected. Inſtead of reſenting this inſult, Henry invited the earl of Douglas to a conference at York; in which the latter agreed to ſerve him during life, by ſea and land, abroad or at home, againſt all living, except his own liege-lord the king of Scotland, with 200 foot and as many horſe, at his own charges; the king of England, in the mean time, allowing an annual revenue of 200 l. for paying his expence in going to the army by ſea or land.

At the ſame time, a new negociation was ſet on foot for the ranſom of king James; but he did not obtain his liberty till the year 1424. Henry V. was then dead; and none of his generals being able to ſupply his place, the Engliſh power in France began to decline. They then became ſenſible how neceſſary it was to be at peace with Scotland, in order to detach ſuch a formidable ally from the French intereſt. James was now highly careſſed, and at his own liberty, within certain bounds. The Engliſh even conſulted him about the manner of conducting the treaty for his ranſom; and one Dougal Drummond, a prieſt, was ſent with a ſafe conduct for the biſhop of Glaſgow, chancellor of Scotland, Dunbar earl of March, John Montgomery of Ardroſſan, Sir Patrick Dunbar of Bele, Sir Robert Lawder of Edrington, Sir William Borthwic of Borthwic, and Sir John Forreſtor of Corſtorphin, to have an interview, at Pomfret, with their maſter the captive king of Scotland, and there to treat of their common intereſts. Moſt of theſe noblemen and gentlemen had before been nominated to treat with the Engliſh about their king's return; and Dougal Drummond ſeems to have been a domeſtic favourite with James. Hitherto the Scottiſh king had been allowed an annual revenue of 700 pounds: but while he was making ready for his journey, his equipages and attendants were increaſed to thoſe befitting a ſovereign; and he received a preſent from the Engliſh treaſury of 100 l. for his private expences. That he might appear with a grandeur every way ſuitable to his dignity, at every ſtage were provided relays of horſes, and all manner of fiſh, fleſh, and fowl, with cooks and other ſervants for furniſhing out the moſt ſumptuous royal entertainment. In this meeting at Pomfret, James acted as a kind of a mediator between the Engliſh and his own ſubjects, to whom he fully laid himſelf open; but, in the mean time, the Engliſh regency iſſued a commiſſion for ſettling the terms upon which James was to be reſtored, if he and his commiſſioners ſhould lay a proper foundation for ſuch a treaty. The Engliſh commiſſioners, were the biſhops of Durham and Worceſter, the earls of Northumberland and Weſtmoreland, the lords Nevil, Cornwal, and Chaworth, with maſter John Wodeham, and Robert Waterton. The inſtructions they received form one of the moſt curious paſſages of this hiſtory; and we ſhall here give them, as they are neceſſary for confirming all we have ſaid concerning the diſpoſitions of the two courts at this juncture.

284 Treaty for the liberty of James.

Firſt, To make a faint oppoſition to any private conference between the king of Scotland and the Scotch commiſſioners.

Secondly, To demand that, before the ſaid king ſhall have his full liberty, the kingdom of Scotland ſhould pay to the Engliſh government at leaſt thirty-ſix thouſand pounds as as equivalent, at two thouſand pounds a year, for the entertainment of King James, who was maintained by the court of England, and not to abate any thing of that ſum; but if poſſible to get forty thouſand pounds. Scotland.

Thirdly, That if the Scots ſhould agree to the payment of the ſaid ſum, the Engliſh commiſſioners ſhould take ſufficient ſecurity and hoſtages for the payment of the ſame; and that if they ſhould not (as there was great reaſon for believing they would) be ſo far mollified, by ſuch eaſy terms, as to offer to enter upon a negociation for a final and perpetual peace between the two people, that then the Engliſh ſhould propoſe the ſame in the moſt handſome manner they could. Farther, that if ſuch difficulties ſhould ariſe as might make it impracticable immediately to conclude ſuch perpetual peace, that the Engliſh ambaſſadors ſhould, under pretence of paving a way for the ſame, propoſe a long truce.

Fourthly, That in caſe the Engliſh commiſſioners ſhould ſucceed in bringing the Scots to agree to the ſaid truce, they ſhould further urge, that they ſhould not ſend to Charles of France, or to any of the enemies of England, any ſuccours by ſea or land. Farther, that the ſaid Engliſh commiſſioners ſhould employ their utmoſt endeavours to procure the recal of the troops already furniſhed by the Scots to France. The Engliſh are commanded to inſiſt very ſtrenuouſly upon this point, but with diſcretion.

Fifthly, If the Scots ſhould, as a further bond of amity between the two nations, propoſe a marriage between their king and ſome noblewoman of England, the Engliſh commiſſioners are to make anſwer, "That the king of the Scots is well acquainted with many noblewomen, and even thoſe of the blood-royal, in England; and that if the king of the Scots ſhall pleaſe to open his mind more freely on that head, the Engliſh commiſſioners ſhall be very ready to enter upon conferences thereupon." But (continues the record) in caſe the Scotch commiſſioners ſhould make no mention of any ſuch alliance by marriage, it will not appear decent for the Engliſh to mention the ſame, becauſe the women of England, at leaſt the noblewomen, are not uſed to offer themſelves in marriage to men.

Sixthly, If there ſhould be any mention made concerning reparation of damages, that the commiſſioners ſhould then proceed upon the ſame as they ſhould think moſt proper; and that they ſhould have power to offer ſafe-conduct to as many of the Scots as ſhould be demanded, for to repair to the court of England. Thoſe inſtructions are dated at Weſtminſter, July 6th 1423.

Nothing definitive was concluded at this treaty, but that another meeting ſhould be held at York inſtead of Pomfret. This meeting accordingly took place. The Engliſh commiſſioners were, Thomas biſhop of Durham, chancellor of England, Philip biſhop of Wincheſter, Henry Percy earl of Northumberland, and Mr John Wodeham. Thoſe for Scotland were, William biſhop of Glaſgow, George earl of March, James Douglas of Balveny, his brother Patrick abbot of Cambuſkenneth, John abbot of Balmerino, Sir Patrick Dunbar

Scotland. bar of Bele, Sir Robert Lauder of Edrington, Mr George Borthwic archdeacon of Glaſgow, and Patric Houlton canon of Glaſgow. On the tenth of September, after their meeting, they came to the following agreement:

First, That the king of Scotland and his heirs, as an equivalent for his entertainment while in England, ſhould pay to the king of England and his heirs, at London, in the church of St Paul, by equal proportions, the ſum of forty thouſand pounds Sterling.

Secondly, that the firſt payment, amounting to the ſum of ten thouſand marks, ſhould be made ſix months after the king of Scotland's entering his own kingdom; that the like ſum ſhould be paid the next year, and ſo on during the ſpace of ſix years, when the whole ſum would be cleared; unleſs, after payment of forty thouſand merks, the laſt payment of ten thouſand ſhould be remitted, at the intreaty of the moſt illuſtrious prince Thomas duke of Exeter.

Thirdly, That the king of Scotland, before entering his own kingdom, ſhould give ſufficient hoſtages for performance on his part. But, in regard that the Scots plenipotentiaries had no inſtructions concerning hoſtages, it was agreed,

Fourthly, That the king of Scotland ſhould be at Branſpath, or Durham, by the firſt of March next, where he ſhould be attended by the nobles of his blood, and other ſubjects, in order to fix the number and quality of the hoſtages.

Fifthly, That to cement and perpetuate the amity of the two kingdoms, the governor of Scotland ſhould ſend ambaſſadors to London, with power to conclude a contract of marriage between the king of Scotland and ſome lady of the firſt quality in England.

James, it is probable, had already fixed his choice upon the lady Joan, daughter to the late earl of Somerſet, who was ſon to John of Gaunt duke of Lancaſter, by his ſecond marriage; but he made his people the compliment, not only of conſulting their opinion, but of concluding the match. The commiſſioners, after their agreement at York, proceeded towards London; and Thomas Somerville of Carnwath, with Walter Ogilvy, were added to their number. Being arrived at that capital, they ratified the former articles, and undertook for their king, that he ſhould deliver his hoſtages to the king of England's officers, in the city of Durham, before the laſt day of the enſuing month of March; that he ſhould alſo deliver to the ſaid officers four obligatory letters, for the whole ſum of 40,000 l. from the four burghs of Edinburgh, Perth, Dundee, and Aberdeen; that he ſhould give his obligatory letter to the ſame purpoſe, before removing from Durham, and ſhould renew the ſame four days after his arrival in his own kingdom; that the hoſtages might be changed from time to time for others of the ſame fortune and quality; that if any of them ſhould die in England, others ſhould be ſent thither in their room; and that while they continued to ſtay in England, they ſhould live at their own charges.

285 Marriage of king James. The marriage of James with the lady Joan Beaufort was celebrated in the beginning of February 1424. The young king of England preſented him with a ſuit of cloth of gold for the ceremony; and the next day he received a legal diſcharge of 10,000 pounds, to be deducted from the 40,000 at which his ranſom was fixed, and which ſum was given as the marriage-portion of the lady. The ceremony being performed, the king and queen ſet out for Durham, where the hoſtages were waiting; and arrived at his own dominions, along with the earl of Northumberland and the chief of the northern nobility, who attended him with great pomp. On the 20th of April the ſame year, he was crowned at Scone; after which ceremony, he followed the example practiſed by other ſovereigns at that time, of knighting ſeveral noblemen and gentlemen. Scotland.

During the dependence of the treaty for James's releaſe, the Scots had emigrated to France in ſuch numbers, that no fewer than 15,000 of them now appeared in arms under the duke of Touraine; but as the hiſtory of the war in that country has already been given under the article FRANCE, we ſhall take no farther notice of it at preſent, but return to the affairs of Scotland.

286 He reforms ſeveral abuſes in Scotland. On his return James found himſelf in a diſagreeable ſituation. The great maxim of the duke of Albany, when regent, had been to maintain himſelf in power by exempting the lower claſs of people from taxes of every kind. This plan had been continued by his ſon Murdoch; but as the latter was deſtitute of his father's abilities, the people abuſed their happineſs, and Scotland became ſuch a ſcene of rapine, that no commoner could ſay he had a property in his own eſtate. The Stewart family, on their acceſſion to the crown of Scotland, were poſſeſſed of a very conſiderable patrimonial eſtate, independent of the ſtanding revenues of the crown, which conſiſted chiefly of cuſtoms, wards, and reliefs. The revenues of the paternal eſtate, belonging to James, had they been regularly tranſmitted to him, would have more than maintained him in a ſplendour equal to his dignity, while he was in England; nor would he in that caſe have had any occaſion for an allowance from the king of England. But as the duke of Albany never intended that his nephew ſhould return, he parcelled out among his favourites the eſtate of the Stewart family, in ſuch a manner that James upon his return found all his patrimonial revenues gone, and many of them in the hands of his beſt friends; ſo that he had nothing to depend on for the ſupport of himſelf and his court but the crown-revenues abovementioned, and even ſome of theſe had been mortgaged during the late regency. This circumſtance, of itſelf ſufficiently diſagreeable, was attended with two others, which tended to make it more ſo. The one was, that the hoſtages which had been left for the king's ranſom in England, being all of them perſons of the firſt rank, were attended by their wives, families, children, and equipages, which rivalled thoſe of the ſame rank in England, and drew a great deal of ready money out of the nation. The other circumſtance aroſe from the charge of the Scots army in France; where Charles, who had never been in a condition to ſupport it, was now reduced to the utmoſt neceſſity: while the revenues of James himſelf were both ſcanty and precarious. To remedy theſe inconveniences, therefore, the king obtained from his parliament an act obliging the heirs of the reſpective counties to inquire what lands and eſtates had belonged to his anceſtors David II. Robert II. and Robert III.; and James formed a reſolution of reſuming theſe lands wherever they could be diſcovered, without regard to perſons or circumſtances. On this occaſion

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occaſion many of the moſt illuſtrious perſonages in the kingdom were arreſted: the duke of Albany, with his two ſons, and the earl of Lennox the duke's father-in-law, were put to death, though their crimes are not ſpecified by hiſtorians. Buchanan mentions a tradition, that James barbarouſly ſent to the counteſs of Lennox the heads of her father, huſband, and ſons; for the following more barbarous reaſon, that in the bitterneſs of her grief ſhe might drop ſome expreſſions tending to involve others in the ſame cataſtrophe. The counteſs, however, calmly ſaid, "That, if the charges againſt the criminals were proved, they deſerved their fate."

287 Several of the nobility executed.

James now proceeded with great ſpirit to reform the abuſes which had pervaded every department of the ſtate, protected and encouraged learning and learned men, and even kept a dairy in which he wrote down the names of all the learned men whom he thought deſerving of his encouragement. James himſelf wrote ſome poetry; and in muſic was ſuch an excellent compoſer, that he is with good reaſon looked upon as the father of Scots muſic, which has been ſo much admired for its elegant ſimplicity. He introduced organs into his chapels, and a much better ſtyle of architecture into all buildings whether civil or religious. Neither did he confine his cares to the fine arts, but encouraged and protected thoſe of all kinds which were uſeful to ſociety; and, in ſhort, he did more towards the civilization of his people than had been done by any of his predeceſſors.

In the mean time the truce continued with England. James, however, ſeemed not to have any inclination to enter into a perpetual alliance with that kingdom. On the contrary, in 1428, he entered into a treaty with France; by which it was agreed, that a marriage ſhould be concluded between the dauphin of France, afterwards Louis XI. and the young princeſs of Scotland; and ſo great was the neceſſity of king Charles for troops at that time, that he demanded only 6000 forces as a portion for the princeſs.

The reſt of the reign of James was ſpent in reforming abuſes, curbing the authority of the great barons, and recovering the royal eſtates out of the hands of uſurpers. In his, however, he uſed ſo much ſeverity, that he was at laſt murdered, in the year 1437. The perpetrators of this murder were the earl of Athol; Robert Grahame, who was connected with the earl, and who was diſcontented on account of his loſing the eſtate of Strathern, which had been re-annexed to the crown; and Robert, grandchild and heir to the earl of Athol, and one of the king's domeſtics. The king had diſmiſſed his army, without even reſerving to himſelf a body-guard, and was at ſupper in a Dominican convent in the neighbourhood of Perth. Grahame had for ſome time been at the head of a gang of outlaws, and is ſaid to have brought a party of them to Perth in the dead of the night, where he poſted them near the convent. Walter Straton, one of the king's cupbearers, went to bring ſome wine to the king while at ſupper; but perceiving armed men ſtanding in the paſſage, he gave the alarm, and was immediately killed. Catharine Douglas, one of the queen's maids of honour, ran to bolt the outer door; but the bar was taken away by Robert Stuart, in order to facilitate the entrance of the murderers. The lady thruſt her arm into the ſtaple; but it was inſtantly broken, and the conſpirators ruſhed in upon the king. Patric Dunbar, brother to the earl of March, was killed in attempting to defend his ſovereign, and the queen received two wounds in attempting to interpoſe herſelf betwixt her huſband and the daggers of the aſſaſſins. James defended himſelf as long as he could; but at laſt expired under the repeated ſtrokes of his murderers, after having received 28 wounds.

288 The king murdered.

Scotland.

289 Succeeded by James II.

After the murder of James I. the crown devolved upon his ſon James II. at that time only ſeven years of age. A parliament was immediately called by the queen mother, at which the moſt cruel puniſhments were decreed to the murderers of the late king. The crime, no doubt, deſerved an exemplary puniſhment; but the barbarities inflicted on ſome of thoſe wretches are ſhocking to relate. Within leſs than ſix weeks after the death of the king, all the conſpirators were brought to Edinburgh, arraigned, condemned, and executed. The meaner ſort were hanged; but on the earl of Athol and Robert Graham the moſt cruel torments were inflicted, ſuch as pinching with hot irons, diſlocation of the joints, &c. The earl of Athol, had beſides, a crown of red-hot iron put on his head; and was afterwards cut up alive, his heart taken out, and, thrown into a fire. In ſhort, ſo dreadful were theſe puniſhments, that Æneas Sylvius, the pope's nuncio, who beheld them, ſaid, that he was at a loſs to determine whether the crime committed by the regicides, or the puniſhment inflicted upon them, was the greater.

As the late king had preſcribed no form of a regency in caſe of his death, the ſettlement of the government became a matter of great difficulty as well as importance. Archibald earl of Douglas, who had been created duke of Touraine in France, was by far the greateſt ſubject in the kingdom; but as he had not been a favourite in the preceding reign, and the people were now diſguſted with regencies, he was not formally appointed to the adminiſtration, though by his high rank he in fact enjoyed the ſupreme power as long as he lived; which, however, was but a ſhort time. He died the ſame year (1438); and Sir Alexander Livingſtone of Callendar was appointed to ſucceed him as governor of the kingdom, that is, to have the executive power, while William Crichton, as chancellor, had the direction of the civil courts. This was a moſt unfortunate partition of power for the public. The governor and chancellor quarrelled; the latter took poſſeſſion of the king's perſon and the caſtle of Edinburgh, to neither of which he had any right; but the former had on his ſide the queen-mother, a woman of intrigue and ſpirit. Her ſon was ſhut up in the caſtle of Edinburgh; and in a ſhort time there was no appearance either of law or government in Scotland. The governor's edicts were counteracted by thoſe of the chancellor under the king's name, and thoſe who obeyed the chancellor were puniſhed by the governor; while the young earl of Douglas, with his numerous followers and dependents, was a declared enemy of both parties, whom he equally fought to deſtroy.

290 Supreme power divided between the governor and chancellor of the kingdom.

291 The queen-mother lets her ſon at liberty.

The queen-mother demanded acceſs to her ſon, which Crichton could find no pretext for denying her; and ſhe was accordingly admitted with a ſmall train into the caſtle of Edinburgh. She played her part ſo well, and

Scotland. and diſſembled with ſo much art, that the chancellor, imagining ſhe had become a convert to his cauſe, treated her with unbounded confidence, and ſuffered her at all hours to have free acceſs to her ſon's perſon. Pretending that ſhe had vowed a pilgrimage to the white church of Buchan, ſhe recommended the care of her ſon's perſon, till her return, to the chancellor, in the moſt pathetic and affectionate terms; but, in the mean time, ſhe ſecretly ſent him to Leith, packed up in a clothes-cheſt; and both ſhe and James were received at Stirling by the governor before the eſcape was known. As every thing had been managed in concert with Livingſton, he immediately called together his friends; and laying before them the tyrannical behaviour of the chancellor, it was reſolved to beſiege him in the caſtle of Edinburgh, the queen promiſing to open her own granaries for the uſe of the army. The chancellor foreſaw the ſtorm that was likely to fall upon him, and ſought to prevent it by applying to the earl of Douglas. That haughty nobleman anſwered him in the terms already mentioned, and that he was preparing to exterminate both parties. The ſiege of Edinburgh caſtle being formed, the chancellor demanded a parley, and to have a perſonal interview with the governor; which the latter, who was no ſtranger to the ſentiments of Douglas, readily agreed to. Common danger united them in a common cauſe; and the chancellor reſigning to the other the cuſtody of the caſtle and the king's perſon, with the higheſt profeſſions of duty and loyalty, the two competitors ſwore an inviolable friendſhip for each other. Next day the king cemented their union, by confirming both of them in their reſpective charges.

292 Inteſtine broils.

The lawleſs example of the earl of Douglas encouraged the other great landholders to gratify their private animoſities, ſometimes at the expence of their honour as well as their humanity. A family-difference happened between Sir Allan Stuart of Darnley, and Thomas Boyd of Kilmarnock; but it was concluded that both parties ſhould come to a peaceable agreement at Polmaiſthorn, between Linlithgow and Falkirk, where Stuart was treacherouſly murdered by his enemy. Stuart's death was revenged by his brother, Sir Alexander Stuart of Beilmouth, who challenged Boyd to a pitched battle, the principals being attended by a retinue which carried the reſemblance of ſmall armies. The conflict was fierce and bloody, each party retiring in its turn, and charging with freſh fury; but at laſt victory declared itſelf for Stuart, the braveſt of Boyd's attendants being cut off in the field. About this time, the iſlanders, under two of their chieftains, Lauchlan Maclean and Murdoc Gibſon, notorious freebooters, invaded Scotland, and ravaged the province of Lenox with fire and ſword. They were oppoſed by John Colquhoun of Luſs, whom they ſlew, ſome ſay treacherouſly, and others, in an engagement at Lochlomond, near Inchmartin. After this, the robbers grew more outrageous than ever, not only filling all the neighbouring country with rapine, but murdering the aged, infants, and the defenceleſs of both ſexes. At laſt, all the labouring hands in the kingdom being engaged in domeſtic broils, none were left for agriculture; and a dreadful famine enſued, which was attended, as uſual, by a peſtilence. James was now about ten years of age; and the wiſeſt part of the kingdom agreed, that the public diſtreſſes were owing to a total diſreſpect of the royal authority. The young earl of Douglas never had fewer than 1000, and ſometimes 2000 horſe in his train; ſo that none was found hardy enough to controul him. He pretended to be independent of the king and his courts of law; that he had a right of judicature upon his own large eſtates; and that he was entitled to the exerciſe of royal power. In conſequence of this he iſſued his orders, gave protections to thieves and murderers, affected to brave the king, made knights, and, according to ſome writers, even noblemen, of his own dependents, with a power of ſitting in parliament. Scotland.

The queen-mother was not wholly guiltleſs of thoſe abuſes. She had fallen in love with and married Sir James Stuart, who was commonly called the *Black Knight of Lorn*, brother to the lord of that title, and a deſcendant of the houſe of Darnley. Affection for her huſband cauſed her to renew her political intrigues; and not finding a ready compliance in the governor, her intereſt inclined towards the party of the Douglaſſes. The governor ſought to ſtrengthen his authority by reſtoring the exerciſe of the civil power, and the reverence due to the perſon of the ſovereign.

293 The queen-mother and her huſband impriſoned.

The conduct of the lord Callendar was in many reſpects not ſo defenſible, either as to prudence or policy. When the queen expreſſed her inclination that her huſband might be admitted to ſome part of the adminiſtration, the governor threw both him and his brother the lord Lorn into priſon, on a charge of undutiful practices againſt the ſtate, and abetting the earl of Douglas in his enormities. The queen, taking fire at her huſband's impriſonment, was herſelf confined in a mean apartment within the caſtle of Stirling; and a convention of the ſtates was called, to judge in what manner ſhe was to be proceeded againſt. The caſe was unprecedented and difficult; nor can we believe the governor would have carried matters to ſuch extremity, had he not had ſtrong evidences of her illegal behaviour. She was even obliged to diſſemble her reſentment, by making an open profeſſion before the ſtates, that ſhe had always been entirely innocent of her huſband's practices, and that ſhe would for the future behave as a peaceable and dutiful ſubject to the laws and the ſovereign. Upon making this purgation (as Lindſay calls it), ſhe was releaſed, as alſo her huſband and his brother, being bailed by the chancellor and the lord Gordon, who became ſureties for their good behaviour in the penalty of 4000 merks. The governor was afterwards accuſed of many arbitrary and partial acts of power: and indeed, if we conſider his ſituation, and the violence of the parties which then divided Scotland, it was almoſt impoſſible, conſiſtently with his own ſafety, to have exerted the virtues either of patriotiſm or moderation.

294 But are releaſed.

The chancellor was exceedingly vexed at the ſmall regard which the governor paid to his perſon and dignity, and ſecretly connected himſelf with the queen-mother; but in the mean time he remained at Edinburgh. The king and his mother continued all this time at Stirling; where the governor, on pretence of conſulting the public ſafety, and that of the king's perſon, maintained a ſtrong guard, part of which attended James in his juvenile exerciſes and diverſions. The queen-mother did not fail to repreſent this to her

Scotland.

295 The chancellor gets the king's perſon into his hands.

ſon as a reſtraint upon his liberty; and obtained his conſent to put himſelf into the chancellor's hands. The latter, who was a man of activity and courage, knew well how to avail himſelf of this permiſſion; and croſſing the Forth in the dark with a ſtrong body of horſe, they ſurrounded the king as he was hunting next morning by break of day. It was eaſy to perceive from the behaviour of James, that he was no ſtranger to the chancellor's attempt; but ſome of the king's guard offering to diſpute the poſſeſſion of his perſon, Sir William Livingſton, the governor's eldeſt ſon, reſtrained them, and ſuffered the king to depart quietly. This ſurpriſal happened on a day when the governor was abſent from Stirling; and the chancellor, to make ſure of his royal acquiſition, entered Edinburgh at the head of 4000 horſe, where the king and he were received by the citizens with loud acclamations of joy.

296 Rebellious behaviour of the earl of Douglas.

The governor ſhowed no emotion at what had happened; on the contrary, he invited the chancellor to an interview, and ſettled all differences with him in an amicable manner. The young lord Douglas, however, continued to brave both parties. As if he had been a ſovereign prince, he demanded by his ambaſſadors, Malcolm Fleming of Cumbernauld, and Allan Lawder, the inveſtiture of the ſovereignty of Touraine from Charles the ſeventh of France; which being readily granted him, ſerved to increaſe his pride and inſolence. The firſt fruits of the accommodation between the two great officers of ſtate was the holding of a parliament at Edinburgh, for redreſſing the public diſorders occaſioned by the earl of Douglas; and encouragement was given to all perſons who had been injured to make their complaints. The numbers which on that occaſion reſorted to Edinburgh were incredible; parents, children, and women, demanding vengeance for the murder of their relations, or the plunder of their eſtates; till, by the multiplicity of their complaints, they became without remedy, none being found bold enough to encounter the earl of Douglas, or to endeavour to bring him to a fair trial. The parties therefore were diſmiſſed without relief, and it was reſolved to proceed with the haughty earl in a different manner. Letters were written to him by the governor and chancellor, and in the name of the ſtates, requeſting him to appear with his friends in parliament, and to take that lead in public affairs to which they were entitled by their high rank and great poſſeſſions. The manner in which thoſe letters were penned made the thoughtleſs earl conſider them as a tribute due to his greatneſs, and as proceeding from the inability of the government to continue the adminiſtration of public affairs without his countenance and direction. Without dreaming that any man in Scotland would be ſo bold as to attack him, even ſingle or unarmed, he anſwered the letters of the chancellor and governor, by aſſuring them that he intended to ſet out for Edinburgh: the chancellor, on pretence of doing him honour, but in reality to quiet his ſuſpicions, met him while he was on his journey; and inviting him to his caſtle of Crichton, he there entertained him for ſome days with the greateſt magnificence and appearance of hoſpitality. The earl of Douglas believed all the chancellor's profeſſions of friendſhip, and even ſharply checked the wiſeſt of his followers, who counſelled him not to depend too much on appearances, or to truſt his brother and himſelf at the ſame time in any place where the chancellor had power. The latter had not only removed the earl's ſuſpicion, but had made him a kind of convert to patriotiſm, by painting to him the miſeries of his country, and the glory that muſt redound to him and his friends in removing them. It was in vain for his attendants to remind him of his father's maxim, never to riſk himſelf and his brother at the ſame time: he without heſitation attended the chancellor to Edinburgh; and being admitted into the caſtle, they dined at the ſame table with the king. Towards the end of the entertainment, a bull's head, the certain prelude of immediate death, was ſerved up. The earl and his brother ſtarted to their feet, and endeavoured to make their eſcape: but armed men ruſhing in, overpowered them, and tying their hands and thoſe of Sir Malcolm Fleming with cords, they were carried to the hill and beheaded. The young king endeavoured with tears to procure their pardon; for which he was ſeverely checked by his unrelenting chancellor.

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297 Is put to death with his brother.

In 1443, the king being arrived at the age of 14, declared himſelf out of the years of minority, and took upon himſelf the adminiſtration of affairs. He appears to have been a prince of great ſpirit and reſolution; and he had occaſion for it. He had appointed one Robert Sempil of Fulwood to be chief governor of the caſtle of Dumbarton; but he was killed by one Galbraeth (a noted partizan of the earl of Douglas), who ſeized upon the government of the caſtle. The popularity of the family of Douglas having ſomewhat ſubſided, and the young earl finding himſelf not ſupported by the chief branches of his family, he began to think, now that the king was grown up, his ſafeſt courſe would be to return to his duty. He accordingly repaired to the king at Stirling; and voluntarily throwing himſelf at his majeſty's feet, implored his pardon for all his tranſgreſſions, and ſolemnly promiſed that he would ever after ſet a pattern of duty and loyalty to all the reſt of his ſubjects. The king, finding that he inſiſted on no terms but that of pardon, and that he had unconditionally put himſelf into his power, not only granted his requeſt, but made him the partner of his inmoſt councils.

298 The young earl ſubmits to the king and is received into favour.

James had always diſliked the murder of the earl of Douglas and his brother; and the chancellor, perceiving the aſcendency which this earl was daily gaining at court, thought it high time to provide for his own ſafety. He therefore reſigned the great ſeal, and retired to the caſtle of Edinburgh, the cuſtody of which he pretended had been granted to him by the late king during his life, or till the preſent king ſhould arrive at the age of 21; and prepared it for a ſiege. The lord Callendar, who knew himſelf equally obnoxious as Crichton was to the earl of Douglas, and that he could not maintain his footing by himſelf, reſigned likewiſe all his poſts, and retired to one of his own houſes, but kept poſſeſſion of the caſtle of Stirling. As both that and the caſtle of Edinburgh were royal forts, the two lords were ſummoned to ſurrender them; but inſtead of complying, they juſtified their conduct by the great power of their enemies, who ſought their deſtruction, and who had been ſo lately at the head of robbers and outlaws; but promiſed to ſurrender themſelves to the king as ſoon as he was of lawful age (meaning, we ſuppoſe, either 18 or 21). This anſwer being deemed con-

299 Great diſturbances in Scotland.

Scotland. contumacious, the chancellor and the late governor, with his two ſons Sir Alexander and Sir James Livingſton, were proclaimed traitors in a parliament which was ſummoned on purpoſe to be held at Stirling. In another parliament held at Perth the ſame year, an act paſſed, that all the lands and goods which had belonged to the late king ſhould be poſſeſſed by the preſent king to the time of his lawful age, which is not ſpecified. This act was levelled againſt the late governor and chancellor, who were accuſed of having alienated to their own uſes, or to thoſe of their friends, a great part of the royal effects and jewels; and their eſtates being confiſcated, the execution of the ſentence was committed to John Forreſter of Corſtorphin, and other adherents of the earl of Douglas.

This ſentence threw all the nation into a flame. The caſtle of Crichton was beſieged; and being ſurrendered upon the king's ſummons and the diſplay of the royal banner, it was levelled with the ground. It ſoon appeared that the governor and chancellor, the latter eſpecially, had many friends; and in particular Kennedy biſhop of St Andrew's, nephew to James the firſt, who ſided with them from the dread and hatred they bore to the earl of Douglas and his family. Crichton thus ſoon found himſelf at the head of a body of men; and while Forreſter was carrying fire and ſword into his eſtates and thoſe of the late governor, his own lands and thoſe of the Douglaſſes were overrun. Corſtorphin, Abercorn, Blackneſs, and other places, were plundered; and Crichton carried off from them more booty than he and his adherents had loſt. Particular mention is made of a fine breed of mares which Douglas had loſt on this occaſion. That nobleman was ſo much exaſperated by the great damages he had ſuſtained, that he engaged his friends the earl of Crawford and Alexander Ogilvy of Innerquharity, to lay waſte the lands of the biſhop of St Andrew's, whom he conſidered as the chief ſupport of the two miniſters. This prelate was not more conſiderable by his high birth, than he was venerable by his virtue and ſanctity; and had, from a principle of conſcience, oppoſed the earl of Douglas and his party. Being conſcious he had done nothing that was illegal, he firſt admoniſhed the earl of Crawford and his coadjutor to deſiſt from deſtroying his lands; but finding his admonitions ineffectual, he laid the earl under an excommunication.

That nobleman was almoſt as formidable in the northern, as the earl of Douglas had been in the ſouthern, parts of Scotland. The Benedictine monks of Aberbrothwic, who were poſſeſſed of great property, had choſen Alexander Lindſay, his eldeſt ſon, to be the judge or bailiff of their temporalities; as they themſelves, by their profeſſion, could not ſit in civil or criminal courts. Lindſay proved ſo chargeable, by the great number of his attendants, and his high manner of living, to the monks, that their chapter removed him from his poſt, and ſubſtituted in his place Alexander Ogilvy of Innerquharity, guardian to his nephew John Ogilvy of Airley, who had an hereditary claim upon the bailiwick. This, notwithſtanding their former intimacy, created an irreconcileable difference between the two families. Each competitor ſtrengthened himſelf by calling in the aſſiſtance of his friends; and the Lord Gordon taking part with the Ogilvies, to whom he was then paying a viſit, both parties immediately muſtered in the neighbourhood of Aberbrothwic. The earl of Crawford, who was then at Dundee, immediately poſted to Aberbrothwic, and placing himſelf between the two armies, he demanded to ſpeak with Ogilvy; but, before his requeſt could be granted, he was killed by a common ſoldier, who was ignorant of his quality. His death exaſperated his friends, who immediately ruſhed on their enemies; and a bloody conflict enſued, which ended to the advantage of the Lindſays, that is, the earl of Crawford's party. On that of the Ogilvies were killed Sir John Oliphant of Aberdagy, John Forbes of Pitſligo, Alexander Barclay of Gartley, Robert Maxwel of Teling, Duncan Campbell of Campbelfether, William Gordon of Burrowfield, and others. With thoſe gentlemen, about 500 of their followers are ſaid to have fallen; but ſome accounts diminiſh that number. Innerquharity himſelf, in flying, was taken priſoner, and carried to the earl of Crawford's houſe at Finhaven, where he died of his wounds; but the Lord Gordon (or, as others call him, the earl of Huntley) eſcaped by the ſwiftneſs of his horſe. 3 ottles.

This battle ſeems to have let looſe the fury of civil diſcord all over the kingdom. No regard was paid to magiſtracy, nor to any deſcription of men but that of clergy. The moſt numerous, fierceſt, and beſt allied family, wreaked its vengeance on its foes, either by force or treachery; and the enmity that actuated the parties, ſtifled every ſentiment of honour, and every feeling of humanity. The Lindſays, ſecretly abetted and ſtrengthened by the earl of Douglas, made no other uſe of their victory than carrying fire and ſword through the eſtates of their enemies; and thus all the north of Scotland preſented ſcenes of murder and devaſtation. In the weſt, Robert Boyd of Duchal, governor of Dunbarton, treacherouſly ſurprized Sir James Stuart of Achmynto, and treated his wife with ſuch inhumanity, that ſhe expired in three days under her confinement in Dumbarton caſtle. The caſtle of Dunbar was taken by Patrick Hepburn of Hales. Alexander Dunbar diſpoſſeſſed the latter of his caſtle of Hales; but it was retaken by the partiſans of the earl of Douglas, whoſe tenants, particularly thoſe of Annandale, are ſaid to have behaved at that time with peculiar fierceneſs and cruelty. At laſt, the gentlemen of the country, who were unconnected with thoſe robbers and murderers, which happened to be the caſe with many, ſhut themſelves up in their ſeveral houſes; each of which, in thoſe days, was a petty fortreſs which they victualled, and provided in the beſt manner they could for their own defence. This wiſe regulation ſeems to have been the firſt meaſure that compoſed the public commotions.

The earl of Douglas, whoſe power and influence at court ſtill continued, was ſenſible that the clergy, with the wiſer and more diſintereſted part of the kingdom, conſidered him as the ſource of the dreadful calamities which the nation ſuffered; and that James himſelf, when better informed, would be of the ſame opinion. He therefore ſought to avail himſelf of the juncture, by forming ſecret but ſtrong connections with the earls of Crawford, Roſs, and other great noblemen, who wanted to ſee their feudal powers reſtored to their full vigour. The queen-dowager and her huſband made little or no figure during this ſeaſon of public confuſion: ſhe

Scotland. had retired to the caſtle of Dunbar, while it was in Hepburn's poſſeſſion, where ſhe died ſoon after. She left by her ſecond huſband three ſons; John, who in 1455 was made earl of Athol, by his uterine brother the king; James, who under the next reign, in 1469, was created earl of Buchan; and Andrew, who afterwards became biſhop of Murray. As the earl of Douglas was an enemy to the queen-dowager's huſband, the latter retired to England, where he obtained a paſs to go abroad, with 20 in his train; but being taken at ſea by the Flemiſh pirates, he died in his confinement.

The great point between the king and Sir William Crichton, whether the latter ſhould give up the caſtle to his majeſty, remained ſtill undecided; and by the advice and direction of the earl of Douglas, who had been created lord-lieutenant of the kingdom, it had now ſuffered a nine months ſiege. Either the ſtrength of the caſtle or an opinion entertained by Douglas that Crichton would be a valuable acquiſition to his party, procured better terms for the latter than he could otherwiſe have expected; for he and his followers were offered a full indemnity for all paſt offences, and a promiſe was made that he ſhould be reſtored not only to the king's favour, but to his former poſt of chancellor. He accepted of the conditions; but refuſed to act in any public capacity till they were confirmed by a parliament, which was ſoon after held at Perth, and in which he was reſtored to his eſtate and honours. By this reconciliation between Douglas and Crichton, the former was left at full liberty to proſecute his vengeance againſt the Lord Callendar, the late governor, his friends and family. That vengeance was exerciſed with rigour. The governor himſelf, Sir James Dundas of Dundas, and Sir Robert Bruce of Clackmannan, were forced to ſave their lives by the loſs of their eſtates; but even that could not preſerve their liberty, for they were ſent priſoners to the caſtle of Dunbarton. The fate of Alexander, the governor's eldeſt ſon, and of two other gentlemen of his name and family, was ſtill more lamentable; for they were condemned to loſe their heads. Thoſe ſeverities being inflicted after the king had in a manner readmitted the ſufferers into his favour, ſwelled the public outcry againſt the earl of Douglas. We have in Lindſay an extract of the ſpeech which Alexander Livingſton, one of the moſt accompliſhed gentlemen of his time, made upon the ſcaffold, in which he complained, with great bitterneſs, of the cruel treatment his father, himſelf, and his friends, had undergone; and that he ſuffered by a packed jury of his enemies.

The king being now about 18 years of age, it was thought proper that a ſuitable conſort ſhould be provided for him; and, after various conſultations, Mary, the daughter of Arnold duke of Gueldres, was choſen, at the recommendation of Charles king of France, though the marriage was not completed till ſome time after. This produced an immediate rupture with England. The earls of Saliſbury and Northumberland entered Scotland at the head of two ſeparate bodies. The former burnt the town of Dumfries, as the latter did that of Dunbar; while Sir John Douglas of Balveny made repriſals by plundering the county of Cumberland, and burning Alnwick. Upon the return of the Engliſh armies to their own country, additional levies were made, and a freſh invaſion of Scotland was reſolved upon under the earl of Northumberland, who had along with him a lieutenant, whom the Scots of thoſe days, from the buſhineſs and colour of his beard, called *Magnus with the red mane*. He was a ſoldier of fortune, but an excellent officer, having been trained in the French wars; and he is ſaid to have demanded no other recompenſe for his ſervices from the Engliſh court, but that he ſhould enjoy all he could conquer in Scotland. The Scots, in the mean time, had raiſed an army commanded by George Douglas earl of Ormond, and under him by Wallace of Craigie, with the Lords Maxwell and Johnſton. The Engliſh having paſſed Solway Frith, ravaged all that part of the country which belonged to the Scots; but hearing that the earl of Ormond's army was approaching, called in their parties, and fixed their camp on the banks of the river Sark. Their advanced guard was commanded by Magnus; their centre by the earl of Northumberland; and the rear, which was compoſed of Welch, by Sir John Pennington, an officer of courage and experience.

300 Invaſion of Scotland by the Engliſh.

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301 The battle of Sark.

The Scots drew up in three diviſions likewiſe. Their right wing was commanded by Wallace, the centre by the earl of Ormond, and their left wing by the Lords Maxwell and Johnſton. Before the battle joined, the earl of Ormond harangued his men, and inſpired them with very high reſentment againſt the Engliſh, who, he ſaid, had treacherouſly broken the truce. The ſignal for battle being given, the Scots under Wallace ruſhed forward upon their enemies: but, as uſual, were received by ſo terrible a diſcharge from the Engliſh archers that their impetuoſity muſt have been ſtopped, had not their brave leader Wallace put them in mind, that their forefathers had always been defeated in diſtant fights by the Engliſh, and that they ought to truſt to their ſwords and ſpears; commanding them at the ſame time to follow his example. They obeyed, and broke in upon the Engliſh commanded by Magnus, with ſuch fury, as ſoon fixed the fortune of the day on the ſide of the Scots, their valour being ſuitably ſeconded by their other two diviſions. The ſlaughter (which was the more conſiderable as both parties fought with the utmoſt animoſity) fell chiefly upon the diviſion commanded by Magnus, who was killed, performing the part of a brave officer; and all his body-guard, conſiſting of picked ſoldiers, were cut in pieces

302 The Engliſh entirely defeated.

The battle then became general: Sir John Pennington's diviſion, with that under the earl of Northumberland, was likewiſe routed; and the whole Engliſh army, ſtruck by the loſs of their champion, fled towards the Solway, where, the river being ſwelled by the tide, numbers of them were drowned. The loſs of the Engliſh in ſlain amounted to at leaſt 3000 men. Among the priſoners were Sir John Pennington, Sir Robert Harrington, and the earl of Northumberland's eldeſt ſon the Lord Percy, who loſt his own liberty in forwarding his father's eſcape. Of the Scots about 600 were killed; but none of note, excepting the brave Wallace, who died three months after of the wounds he had received in this battle. The booty that was made on this occaſion is ſaid to have been greater than any that had fallen to the Scots ſince the battle of Bannockburn.

The reſt of the hiſtory of this reign conſiſts almoſt entirely of a relation of the cabals and conſpiracies of the great men. The earl of Douglas had entered into a con-

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confederacy with the earls of Crawford, Moray, and Roſs, and appeared on all occaſions with ſuch a train of followers as bade defiance to royal power itſelf. This

303 Rebellion of the earl of Douglas and others.

inſolence was detetted by the wiſer part of the nation; and one Maclellan, who is called the *Tutor of Bomby*, and was nephew to Sir Patrick Gray, captain of the king's guard, refuſed to give any attendance upon the earl, or to concur in his meaſures, but remained at home as a quiet ſubject. This inoffenſive behaviour was by the earl conſidered as treaſon againſt himſelf; and violently ſeizing upon Maclellan's houſe and perſon, he ſent him cloſe priſoner to the caſtle of Douglas. As Maclellan was a gentleman of great worth and reputation, his uncle Gray applied earneſtly to James in his favour; and ſuch was that prince's regard for Maclellan, that he wrote and ſigned a letter for his releaſe, addreſſed to the earl of Douglas. Upon Gray's delivering this letter to Douglas at his caſtle, the latter ſeemed to receive it with the higheſt reſpect, and to treat Gray with the greateſt hoſpitality, by inviting him to dinner; but, in the mean time, he gave private orders that Maclellan's head ſhould be ſtruck off, and his body expoſed upon the green before the caſtle covered with a linen cloth. After dinner, the earl told Gray, that he was ready to obey the king's commands; and conducting him to the green, he ſhowed him the lifeleſs trunk, which he ſaid Gray might diſpoſe of as he pleaſed. Upon this, Gray mounted his horſe, and truſted to his ſwiftneſs for his own ſafety; for he was purſued by the earl's attendants to the gates of Edinburgh.

The conſpiracy againſt James's government was now no longer a ſecret. The lords Balveny and Hamilton, with ſuch a number of other barons and gentlemen, had acceded to it, that it was thought to be more powerful than all the force the king could bring into the field. Even Crichton adviſed James to diſſemble. The confederates entered into a ſolemn bond and oath never to deſert one another during life; and, to make uſe of Drummond's words, "That injuries done to any one of them ſhould be done to them all, and be a common quarrel; neither ſhould they deſiſt, to their beſt abilities, to revenge them: that they ſhould concur indifferently againſt whatſoever perſons within or without the realm, and ſpend their lives, lands, goods, and fortunes, in defence of their debates and differences whatſoever." All who did not enter into this aſſociation were treated as enemies to the public; their lands were deſtroyed, their effects plundered, and they themſelves impriſoned or murdered. Drummond ſays, that Douglas was then able to bring 40,000 men into the field; and that his intention was to have placed the crown of Scotland upon his own head. How far he might have been influenced by a ſcene of the ſame nature that was then paſſing between the houſes of York and Lancaſter in England, we ſhall not pretend to determine; though it does not appear that his intention was to wear the crown himſelf, but to render it deſpicable upon his ſovereign's head. It is rather evident, from his behaviour, that he did not affect royalty; for when James invited him to a conference in the caſtle of Stirling, he offered to comply provided he had a ſafe conduct. This condition plainly implied, that he had no reliance upon the late act of parliament, which declared the proclamation of the king's peace to be a ſufficient ſecurity for life and fortune to all his ſubjects; and there is no denying that the ſafe conduct was expedited in the form and manner required. Scotland.

This being obtained, the earl began his march towards Stirling with his uſual great retinue; and arrived there on Shrove-Tueſday. He was received by the king as if he had been the beſt of his friends, as well as the greateſt of his ſubjects, and admitted to ſup with his majeſty in the caſtle, while his attendants were diſperſed in the town, little ſuſpecting the cataſtrophe that followed. The entertainment being over, the king told the earl with an air of frankneſs, "That as he was now of age, he was reſolved to be the father of all his people, and to take the government into his own hands; that his lordſhip, therefore, had no reaſon to be under any apprehenſions from his old enemies Callendar and Crichton; that there was no occaſion to form any confederacies, as the law was ready to protect him; and that he was welcome to the principal direction of affairs under the crown, and to the firſt place in the royal confidence; nay, that all former offences done by himſelf and his friends ſhould be pardoned and forgot."

304 Interview between king James and the earl of Douglas.

This ſpeech was the very reverſe of what the earl of Douglas aimed at. It rendered him, indeed, the firſt ſubject of the kingdom; but ſtill he was controulable by the civil law. In ſhort, upon the king's peremptorily putting the queſtion to him, he not only refuſed to diſſolve the confederacy, but upbraided the king for his government. This produced a paſſionate rejoinder on the part of James; but the earl repreſented that he was under a ſafe conduct, and that the nature of his confederacy was ſuch, that it could not be broken but by the common conſent of all concerned. The king inſiſted upon his ſetting the example; and the earl continuing more and more obſtinate, James ſtabbed him with his dagger; and armed men ruſhing into the room, finiſhed the ſlaughter.

305 The king kills him with his own hand

After the death of the earl of Douglas, the confederacy came to nothing. The inſurgents excuſed themſelves as being too weak for ſuch an enterpriſe; and were contented with trailing the ſafe conduct at a horſe's tail, and proclaiming, by trumpets and horns, the king a perjured traitor. They proceeded no farther; and each departed to his own habitation, after agreeing to aſſemble with freſh forces about the beginning of April. James loſt no time in improving this ſhort reſpite; and found the nation in general much better diſpoſed in his favour than he had reaſon to expect. The intolerable oppreſſions of the great barons made his ſubjects eſteem the civil, far preferable to the feudal, ſubjection: and even the Douglaſſes were divided among themſelves; for the earl of Angus and Sir John Douglas of Dalkeith were among the moſt forward of the royaliſts. James at the ſame time wrote letters to the earl of Huntley, and to all the noblemen of his kingdom who were not parties in the confederacy, beſides the eccleſiaſtics who remained firmly attached to his prerogative. Before the effect of thoſe letters could be known, the inſurgents had returned to Stirling (where James ſtill wiſely kept himſelf upon the defenſive); repeated their inſolences, and the opprobrious treatment of his ſafe conduct; and at laſt they plundered the town, and laid it in aſhes. Being ſtill unable to take the caſtle, partly through their own diviſions, and partly through the diverſity of the operations

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tions they were obliged to ſupply, they left Stirling, and deſtroyed the eſtate of Sir John Douglas of Dalkeith, whom they conſidered as a double traitor, becauſe he was a Douglas and a good ſubject. They then beſieged his caſtle: but it was ſo bravely defended by Patrick Cockburn, a gentleman of the family of Langton, that they raiſed the ſiege; which gave the royal party farther leiſure for humbling them.

All this time the unhappy country was ſuffering the moſt cruel devaſtations; for matters were now come to ſuch extremity, that it was neceſſary for every man to be a royaliſt or a rebel. The king was obliged to keep on the defenſive; and though he had ventured to leave the caſtle of Stirling, he was in no condition to face the rebels in the field. They were in poſſeſſion of all the ſtrong paſſes by which his friends were to march to his aſſiſtance; and he even conſulted with his attendants on the means of eſcaping to France, where he was ſure of an hoſpitable reception. He was diverted from that reſolution by biſhop Kennedy and the earl of Angus, who was himſelf a Douglas, and prevailed upon to wait for the event of the earl of Huntley's attempts for his ſervice. This nobleman, who was deſcended from the Seatons, but by marriage inherited the great eſtates of the Gordons in the north, had raiſed an army for James, to whoſe family he and his anceſtors, by the Gordons as well as the Seatons, had been always remarkably devoted. James was not miſtaken in the high opinion he had of Huntley; and in the mean time he iſſued circular letters to the chief eccleſiaſtics and bodies-politic of his kingdom, ſetting forth the neceſſity he was under to proceed as he had done, and his readineſs to protect all his loyal ſubjects in their rights and privileges againſt the power of the Douglaſſes and their rebellious adherents. Before thoſe letters could have any effect, the rebels had plundered the defenceleſs houſes and eſtates of all who were not in their confederacy, and had proceeded with a fury that turned to the prejudice of their cauſe.

The indignation which the public had conceived againſt the king, for the violation of his ſafe conduct, began now to ſubſide; and the behaviour of his enemies in ſome meaſure juſtified what had happened, or at leaſt made the people ſuſpect that James would not have proceeded as he did without the ſtrongeſt provocation. The forces he had aſſembled being unable, as yet, to act offenſively, he reſolved to wait for the earl of Huntley, who by this time was at the head of a conſiderable army, and had begun his march ſouthwards. He had been joined by the Forbeſes, Ogilvies, Leſlies, Grants, Irvings, and other relations and dependents of his family; but having advanced as far as Brechin, he

306 Battle of Brechin, where the rebels are defeated.

was oppoſed by the earl of Crawford, the chief ally of the earl of Douglas, who commanded the people of Angus, and all the adherents of the rebels in the neighbouring countries, headed by foreign officers. The two armies joining battle on the 18th of May, victory was for ſome time in ſuſpenſe; till one Coloſs of Bonnymoon, on whom Crawford had great dependence, but whom he had imprudently diſobliged, came over to the royaliſts with the diviſion he commanded, which was the beſt armed part of Crawford's army, conſiſting of battle-axes, broad-ſwords, and long ſpears. His defection gave the fortune of the day to the earl of Huntley, as it left the centre flank of Crawford's army entirely expoſed to the royaliſts. He himſelf loſt one of his brothers; and fled with another, Sir John Lindſay, to his houſe at Finhaven, where it is reported that he broke out into the following ejaculation: "That he would be content to remain ſeven years in hell, to have in ſo timely a ſeaſon done the king his maſter that ſervice the earl of Huntley had performed, and carry that applauſe and thanks he was to receive from him."

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No author informs us of the loſs of men on either ſide, though all agree that it was very conſiderable upon the whole. The earl of Huntley, particularly, loſt two brothers, William and Henry; and we are told, that, to indemnify him for his good ſervices, as well as for the rewards and preſents he had made in lands and privileges to his faithful followers, the king beſtowed upon him the lands of Badenoch and Lochaber.

307 The rebellion ſuppreſſed.

The battle of Brechin was not immediately deciſive in favour of the king, but proved ſo in its conſequences. The earl of Moray, a Douglas likewiſe, took advantage of Huntley's abſence to haraſs and ravage the eſtates of all the royaliſts in the north; but Huntley returning from Brechin with his victorious army, drove his enemy into his own county of Moray, and afterwards expelled him even from thence. James was now encouraged, by the advice of his kinſman Kennedy biſhop of St Andrew's, to whoſe firmneſs and prudence he was under great obligations, to proceed againſt the rebels in a legal manner, by holding a parliament at Edinburgh, to which the confederated lords were ſummoned; and upon their non-compearance, they were ſolemnly declared traitors. This proceeding ſeemed to make the rebellion rage more fiercely than ever; and at laſt, the confederates, in fact, diſowned their allegiance to James. The earls of Douglas, Crawford, Ormond, Moray, the Lord Balveny, Sir James Hamilton, and others, ſigned with their own hands public manifeſtoes, which were paſted on the doors of the principal churches, importing, "That they were reſolved never to obey command or charge, nor anſwer citation for the time coming; becauſe the king, ſo far from being a juſt maſter, was a bloodſucker, a murderer, a tranſgreſſor of hoſpitality, and a ſurpriſer of the innocent." It does not appear that thoſe and the like atrocious proceedings did any ſervice to the cauſe of the confederates. The earl of Huntley continued victorious in the north; where he and his followers, in revenge for the earl of Moray's having burnt his caſtle of Huntley, ſeized or ravaged all that nobleman's great eſtate north of the Spey. When he came to the town of Forres, he burnt one ſide of the town, becauſe it belonged to the earl, and ſpared the other, becauſe it was the property of his own friends. James thought himſelf, from the behaviour of the earl of Douglas and his adherents, now warranted to come to extremities; and marching into Annandale, he carried fire and ſword through all the eſtates of the Douglaſſes there. The earl of Crawford, on the other hand, having now recruited his ſtrength, deſtroyed the lands of all the people of Angus and of all others who had abandoned him at the battle of Brechin; though there is reaſon to believe, that he had already ſecretly reſolved to throw himſelf upon the king's mercy.

308 Aſſociation againſt the king by the earls of Douglas, Crawford, &c.

Nothing but the moſt obſtinate pride and reſentment could have prevented the earl of Douglas, at this time, from taking the advice of his friends, by returning to his

Scotland. his duty; in which caſe, James had given ſufficient intimations that he might expect pardon. He coloured his contumacy with the ſpecious pretext, that his brother's fate, and thoſe of his two kinſmen, ſufficiently inſtructed him never to truſt to James or his miniſters; that he had gone too far to think now of receding; and that kings, when once offended, as James had been, never pardoned in good earneſt. Such were the chief reaſons, with others of leſs conſequence, which Drummond has put into the mouth of Douglas at this time. James, after his expedition into Annandale, found the ſeaſon too far advanced to continue his operations; and returning to Edinburgh, he marched northwards to Angus, to reduce the earl of Crawford, who was the ſecond rebel of power in the kingdom. That nobleman had hitherto deferred throwing himſelf at the king's feet, and had reſumed his arms, in the manner related, only in hopes that better terms might be obtained from James for himſelf and his party. Perceiving that the earl of Douglas's obſtinacy had cooled ſome other lords of the confederacy, and had put an end to all hopes of a treaty, he reſolved to make a merit of breaking the confederacy, by being the firſt to ſubmit. James having arrived in Angus, was continuing his march through the country, when the earl and ſome of his chief followers fell on their knees before him on the road, bareheaded and barefooted. Their dreary looks, their ſuppliant poſtures, and the tears which ſtreamed abundantly from the earl, were expreſſive of the moſt abject contrition; which was followed by a penitential ſpeech made by the earl, acknowledging his crimes, and imploring forgiveneſs.

309 Broken by the earl of Crawford.

James was then attended by his chief counſellors, particularly biſhop Kennedy, who, he reſolved, ſhould have ſome ſhare in the favour he meant to extend to the earl. He aſked their advice; which proving to be on the merciful ſide, James promiſed to the earl and his followers reſtitution of all their eſtates and honours, and full pardon for all that had paſſed. The earl, as a grateful retribution for this favour, before the king left Angus, joined him with a noble troop of his friends and followers; and, attending him to the north, was extremely active in ſuppreſſing all the remains of the rebellion there.

310 Who is received into favour.

The ſubmiſſion of the earl of Crawford was followed by that of the earl of Douglas; which, however, continued only for a ſhort time. This powerful nobleman ſoon reſumed his rebellious practices; and, in the year 1454, raiſed an army to fight againſt the king. The king erected his ſtandard at St Andrew's; marched from thence to Falkland; and ordered all the forces of Fife, Angus, and Strathern, with thoſe of the northern parts, to rendezvous by a certain day at Stirling; which they did to the number of 30,000. Douglas aſſembled his forces, which amounted to 40,000, ſome ſay 60,000 men, on the ſouth ſide of the river Carron, about half way between Stirling and Abercorn. However, notwithſtanding this ſuperiority of force, the earl did not think it proper to fight his ſovereign. Biſhop Kennedy, the prelate of St Andrew's, had adviſed the king to divide his enemies by offering them pardon ſeparately; and ſo good an effect had this, that in a few days the earl found himſelf deſerted by all his numerous army, excepting about 100 of his neareſt friends and domeſtics, with whom he retired towards England. His

311 Earl Douglas ſubmits, but rebels again.

friends had indeed adviſed him to come to a battle immediately; but the earl, for reaſons now unknown, refuſed. However, in his journey ſouthward, he raiſed a conſiderable body of forces, conſiſting of his own tenants, of outlaws, robbers, and borderers, with whom he renewed his depredations on the loyal ſubjects of the king. He was oppoſed by the earl of Angus, who, though of the name of Douglas, continued firm in the royal cauſe. An engagement enſued at Ancram-muir; where Douglas was entirely defeated, and he himſelf with great difficulty eſcaped to an adjacent wood. What his fate was after this battle does not appear; but it is certain that his eſtates were afterwards forfeited to the king.

312 He is entirely defeated.

The reſt of the reign of James II. was ſpent in making proper regulations for the good of his people. In 1460 he was killed at the ſiege of Roxburgh caſtle, by the burſting of a cannon, to which he was too near when it was diſcharged. This ſiege he had undertaken in favour of the queen of England, who, after loſing ſeveral battles, and being reduced to diſtreſs, was obliged to apply to James for relief. The nobility who were preſent concealed his death, for fear of diſcouraging the ſoldiers; and in a few hours after, the queen appeared in the camp, and preſented her young ſon, James III. as their king.

313 King Ja. II. killed by accident.

James III. was not quite ſeven years of age at his acceſſion to the crown. The adminiſtration naturally devolved on his mother; who puſhed the ſiege of Roxburgh caſtle with ſo much vigour, that the garriſon was obliged to capitulate in a few days; after which the army ravaged the country, and took and diſmantled the caſtle of Wark.—In 1466, negociations were begun for a marriage between the young king and Margaret princeſs of Denmark; and, in 1468, the following conditions were ſtipulated. 1. That the annual rent hitherto paid for the northern Iſles of Orkney and Shetland ſhould be for ever remitted and extinguiſhed. 2. That king Chriſtiern, then king of Denmark, ſhould give 60,000 florins of gold for his daughter's portion, whereof 10,000 ſhould be paid before her departure from Denmark; and that the iſlands of Orkney ſhould be made over to the crown of Scotland, by way of pledge for the remainder; with this expreſs proviſo, that they ſhould return to that of Norway after complete payment of the whole ſum. 3. That king James ſhould, in caſe of his dying before the ſaid Margaret his ſpouſe, leave her in poſſeſſion of the palace of Linlithgow and caſtle of Down in Menteith, with all their appurtenances, and the third part of the ordinary revenues of the crown, to be enjoyed by her during life, in caſe ſhe ſhould chooſe to reſide in Scotland. 4. But if ſhe rather choſe to return to Denmark, that in lieu of the ſaid liferent, palace, and caſtle, ſhe ſhould accept of 120,000 florins of the Rhine; from which ſum the 50,000 due for the remainder of her portion being deduced and allowed, the iſlands of Orkney ſhould be reannexed to the crown of Norway as before.

314 James III.

315 Marriage treaty with the princeſs of Denmark.

When theſe articles were agreed upon, Chriſtiern found himſelf unable to fulfil his part of them. Being at that time engaged in an unſucceſsful war with Sweden, he could not advance the 10,000 florins which he had promiſed to pay down as part of his daughter's fortune. He was therefore obliged to apply to the plenipotentiaries to accept of 2000, and to take a farther mort-

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mortgage of the iſles of Shetland for the other 8,000. The Scotiſh plenipotentiaries, of whom Boyd earl of Arran was one, gratified him in his requeſt; and this conceſſion is thought to have proved fatal to the earl. Certain it is, that his father was beheaded for treaſonable practices alleged to have been committed long before, and for which he produced a parliamentary indemnity to no purpoſe: the earl himſelf was divorced from his wife the king's ſiſter, and obliged to live in perpetual exile, while the counteſs was married to another.

316 Diſgrace of the earl of Arran's family.

317 Beginning of James's misfortunes.

In 1476, thoſe misfortunes began to come on James which afterwards terminated in his ruin. He had made his brother, the duke of Albany, governor of Berwick; and had entruſted him with very extenſive powers upon the borders, where a violent propenſity for the feudal law ſtill continued. The Humes and the Hepburns, then the moſt powerful ſubjects in thoſe parts, could not brook the duke of Albany's greatneſs, eſpecially after he had forced them, by virtue of a late act, to part with ſome of the eſtates which had been inconſiderately granted them in this and the preceding reign.

318 Is infatuated with the belief of aſtrology.

The pretended ſcience of judicial aſtrology, by which James happened to be incredibly infatuated, was the eaſieſt as well as moſt effectual engine that could work their purpoſes. One Andrew, an infamous impoſtor in that art, had been brought over from Flanders by James; and he and Schevez, then archbiſhop of St Andrew's, concurred in perſuading James that the Scotch lion was to be devoured by his own whelps; a prediction that, to a prince of James's turn, amounted to a certainty.

The condition to which James reduced himſelf by his belief in judicial aſtrology, was truly deplorable. The princes upon the continent were ſmitten with the ſame infatuation; and the wretches who beſieged his perſon had no ſafety but by continuing the deluſion in his mind. According to Lindſay, Cochran, who had ſome knowledge of architecture, and had been introduced to James as a maſter-maſon, privately procured an old woman, who pretended to be a witch, and who heightened his terrors by declaring that his brothers intended to murder him. James believed her; and the unguarded manner in which the earl of Mar treated his weakneſs, exaſperated him ſo much, that the earl giving a farther looſe to his tongue in railing againſt his brother's unworthy favourites, was arreſted, and committed to the caſtle of Craig Miller; from whence he was brought to the Canongate, a ſuburb of Edinburgh, where he ſuffered death.

319 Death of the king's brother the earl of Mar.

320 Duke of Albany arreſted, but eſcapes.

The duke of Albany was at the caſtle of Dunbar when his brother the earl of Mar's tragedy was acted; and James could not be eaſy without having him likewiſe in his power. In hopes of ſurpriſing him, he marched to Dunbar: but the duke, being appriſed of his coming, fled to Berwick, and ordered his caſtle of Dunbar to be ſurrendered to the lord Evendale, though not before the garriſon had provided themſelves with boats and ſmall veſſels, in which they eſcaped to England. He ventured to come to Edinburgh; where James was ſo well ſerved with ſpies, that he was ſeized, and committed cloſe priſoner to the caſtle, with orders that he ſhould ſpeak with none but in the preſence of his keepers. The duke had probably ſuſpected and provided againſt this diſagreeable event; for we are told that he had agents, who every day repaired to the caſtle, as if they had come from court, and reported the ſtate of matters between him and the king, while his keepers were preſent, in ſo favourable a light, that they made no doubt of his ſoon regaining his liberty, and being re-admitted to his brother's favour. The ſeeming negociation, at laſt, went ſo proſperouſly on, that the duke gave his keepers a kind of a farewell entertainment, previous to his obtaining a formal deliverance; and they drank ſo immoderately, that being intoxicated, they gave him an opportunity of eſcaping over the caſtle wall, by converting the ſheets of his bed into a rope. Whoever knows the ſituation of that fortreſs, muſt be amazed at the boldneſs of this attempt; and we are told that the duke's valet, the only domeſtic he was allowed to have, making the experiment before his maſter, broke his neck: upon which the duke, lengthening the rope, ſlid down unhurt; and carrying his ſervant on his back to a place of ſafety, he went on board a ſhip which his friends had provided, and eſcaped to France.

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In 1482, the king began to feel the bad conſequences of taking into his favour men of worthleſs characters, which ſeems to have been one of this prince's pernicious foibles. His great favourite at this time was Cochran, whom he had raiſed to the dignity of earl of Mar. All hiſtorians agree that this man made a moſt infamous uſe of his power. He obtained at laſt a liberty of coinage, which he abuſed ſo much as to endanger an inſurrection among the poor people; for he iſſued a baſe coin, called *black-money* by the common people, which they refuſed to take in payments. This favourite's ſkill in architecture had firſt introduced him to James; but he maintained his power by other arts; for, knowing that his maſter's predominant paſſion was the love of money, he procured it by the meaneſt and moſt oppreſſive methods. James, however, was inclined to have relieved his people by calling in Cochran's money; but he was diverted from that reſolution, by conſidering that it would be agreeable to his old nobility. Beſides Cochran, James had other favourites, whoſe profeſſions rendered them ſtill leſs worthy of the royal countenance; James Hommil, a taylor, Leonard a blackſmith, Torriſan a dancing-maſter, and ſome others. The favour ſhown to theſe men gave ſo much offence to the nobility, that, after ſome deliberation, they reſolved to remove the king, with ſome of his leaſt exceptionable domeſtics (but without offering any violence to his perſon) to the caſtle of Edinburgh; but to hang all his worthleſs favourites over Lawder-bridge, the common place of execution. Their deliberation was not kept ſo ſecret as not to come to the ears of the favourites; who ſuſpecting the worſt, wakened James before day-break, and informed him of the meeting. He ordered Cochran to repair to it, and to bring him an account of its proceedings (L). According to Lindſay,

321 Cochran, the king's great favourite.

(L) Lindſay's deſcription of this upſtart's magnificence is very particular, and may ſerve to give the reader an idea of the finery of that age. "Cochran (ſays he), the earl of Mar, came from the king to the council (which

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322 He is seized and put to death

say, who seems to have had very minute information as to this event, Cochran rudely knocked at the door of the church, just after the assembly had finished their consultation; and upon Sir Robert Douglas of Lochleven (who was appointed to watch the door) informing them that the earl of Mar demanded admittance, the earl of Angus ordered the door to be thrown open; and rushing upon Cochran, he pulled a massy gold chain from his neck, saying, that a rope would become him better; while Sir Robert Douglas stripped him of a costly blowing horn he wore by his side, as was the manner of the times, telling him he had been too long the hunter of mischief. Cochran, with astonishment, asked them whether they were in jest or earnest; but they soon convinced him they were in earnest by pinioning down his arms with a common halter till he should be carried to execution.

323 With others of the king's favourites.

The earl of Angus, with some of the chief lords, attended by a detachment of troops, then repaired to the king's tent, where they seized his other favourites, Thomas Preston, Sir William Rogers, James Hommil, William Torfifan, and Leonard: and upbraided James himself, in very rude terms, with his misconduct in government, and even in private life, in not only being counselled by the above minions, but for keeping company with a lady who was called the *Daisy*. We know of no resistance made by James. He only interceded for the safety of a young gentleman, one John Ramsay of Balmain. Cochran, with his other worthless favourites, were hanged over Lawder-bridge before his eyes; and he himself was conducted, under an easy restraint,

324 James confined in the castle of Edinburgh.

to the castle of Edinburgh.

James, though confined, behaved with great spirit; and even refused to pardon those who had confined him, or who had any hand in the execution at Lawder. At last, however,

325 Relieved by the duke of Albany.

he was relieved by the duke of Albany, who, at the queen's desire, undertook to deliver her husband from confinement. This he accomplished as some say, by surprising the castle of Edinburgh; though, according to others, the gates were opened, upon a formal requisition made for that purpose by two heralds at arms. After he had obtained his liberty, the king repaired to the abbey of Holyroodhouse with his brother, who now acted as his first minister. All the lords who were near the capital came to pay him their compliments; but James was so much exasperated at what had happened, that he committed 16 of them prisoners to the castle of Edinburgh. After his release, James granted a patent to the citizens of Edinburgh, and enlarged their privileges.

325 Secret negociations with Henry VII. of England.

In 1487, James finished some secret negociations in which he had engaged with Henry king of England some time. The principal articles agreed on between the two monarchs were, That king James's second son should marry Catharine the third daughter of Edward IV. and sister to the princess Elizabeth, now queen of England; and that James himself, who was now a widower, should marry queen Elizabeth. A third marriage was also to be concluded between the duke of Rothesay and another daughter of Edward IV. That in order to these treaties, and for ending all controversies concerning the town of Berwick, which the king of Scotland desired so much to possess, a congress should be held the ensuing year.

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326 A powerful confederacy formed against the king.

But in the mean time a most powerful confederacy was formed against the king; the origin of which was as follows. James was a great patron of architecture; and being pleased with the situation of Stirling castle, he resolved to give it all the embellishments which that art could bestow; and about this time he made it the chief place of his residence. He raised within it a hall, which at that time was deemed a noble structure; and a college, which he called the chapel-royal. This college was endowed with an archdean who was a bishop, a subdean, a treasurer, a chanter and subchanter, with a double set of other officers usually belonging to such institutions. The expences necessary for maintaining these were considerable, and the king had resolved to assign the revenues of the rich priory of Coldingham for that purpose. This priory had been generally held by one of the name of Hume; and that family, through length of time, considered it as their property: they therefore strongly opposed the king's intention. The dispute seems to have lasted some years: for the former parliament had passed a vote, annexing the priory to the king's chapel-royal; and the parliament of this year had passed a statute, strictly prohibiting all persons, spiritual and temporal, to attempt any thing, directly or indirectly, contrary or prejudicial to the said union and annexation. The Humes resented their being stripped of so gainful a revenue, the loss of which affected most of the gentlemen of that name; and they united themselves with the Hepburns, another powerful clan in that neighbouroood, under the lord Hales. An association was soon formed; by which both families engaged to stand by each other, and not to suffer any prior to be received for Coldingham, if he was not of one of their surnames. The lords Gray and Drummond soon joined the association; as did many other noblemen and gentlemen, who had their particular causes of discontent. Their agents gave out, that the king was grasping at arbitrary power; that he had acquired his popularity by deep hypocrisy; and that he was resolved to be signally revenged upon all who had any hand in the execution at Lawder. The earl of Angus, who was the soul of the confederacy, advised the conspirators to apply to the old earl of Douglas to head them: but that nobleman was now dead to all ambition, and instead

327 Owing to a quarrel with the family of Hume.

(which council was holden in the kirk of Lawder for the time), who was well accompanied with a band of men of war, to the number of 300 light axes, all clad in white livery, and black bends thereon, that they might be known for Cochran the earl of Mar's men. Himself was clad in a riding-pie of black velvet, with a great chain of gold about his neck, to the value of 500 crowns; and four blowing horns, with both the ends of gold and silk, set with precious stones. His horn was tipped with fine gold at every end, and a precious stone, called a *beryl*, hanging in the midst. This Cochran had his heumont borne before him, overgilt with gold; so were all the rest of his horns; and all his pallions (pavilions or tents) were of fine canvas of silk, and the cords thereof fine twined silk; and the chains upon his pallions were double overgilt with gold."

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of encouraging the conſpirators, he pathetically exhorted them to break off all their rebellious connections, and return to their duty; expreſſing the moſt ſincere contrition for his own paſt conduct. Finding he could not prevail with them, he wrote to all the numerous friends and deſcendants of his family, and particularly to Douglas of Cavers, ſheriff of Teviotdale, diſſuading them from entering into the conſpiracy; and ſome of his original letters to that effect are ſaid to be ſtill extant. That great man ſurvived this application but a ſhort time; for he died without iſſue at Lindores, on the 15th of April 1488; and in him ended the firſt branch of that noble and illuſtrious houſe. He was remarkable for being the moſt learned of all the Scots nobility, and for the comlineſs of his perſon.

328 Extinction of one of the branches of the family of Douglas.

James appears to have been no ſtranger to the proceedings of the conſpirators: but though he dreaded them, he depended upon the protection of the law, as they did upon his puſillanimity. His degeneracy in this reſpect is remarkable. Deſcended from a race of heroes, he was the firſt of his family who had been branded with cowardice. But his conduct at this time fully juſtifies the charge. Inſtead of vigorouſly ſupporting the execution of the laws in his own perſon, he ſhut himſelf up in his beloved caſtle of Stirling, and raiſed a body-guard; the command of which he gave to the lord Bothwel, maſter of his houſehold. He likewiſe iſſued a proclamation, forbidding any perſon in arms to approach the court; and Bothwel had a warrant to ſee the ſame put into execution. Though the king's proceedings in all this were perfectly agreeable to law, yet they were given out by his enemies as ſo many indications of his averſion to the nobility, and ſerved only to induce them to parade, armed, about the country in more numerous bodies.

329 Puſillanimous behaviour of James.

The connections entered into by James with Henry alarmed the conſpirators, and made them reſolve to ſtrike the great blow before James could avail himſelf of an alliance that ſeemed to place him above all oppoſition either abroad or at home. The acquiſition of Berwick to the crown of Scotland, which was looked upon to be as good as concluded; the marriage of the duke of Rotheſay with the daughter of the dowager and ſiſter to the conſort queen of England; and, above all, the ſtrict harmony which reigned between James and the ſtates of his kingdom, rendered the conſpirators in a manner deſperate. Beſides the earl Angus, the earls of Argyle and Lenox favoured the conſpirators; for when the whole of James's convention with England is conſidered, and compared with after-events, nothing can be more plain, than that the ſucceſs of the conſpirators was owing to his Engliſh connections; and that they made uſe of them to affirm, that Scotland was ſoon to become a province of England, and that James intended to govern his ſubjects by an Engliſh force.—Thoſe ſpecious allegations did the conſpirators great ſervice, and inclined many, even of the moderate party, to their cauſe. They ſoon took the field, appointed their rendezvouſes, and all the ſouth of Scotland was in arms. James continued to rely upon the authority of his parliament; and ſummoned, in the terms of law, the inſurgents to anſwer at the proper tribunals for their repeated breaches of the peace. The conſpirators, far from paying any regard to his citations, tore them in pieces, buffeted and otherwiſe maltreated the meſſengers, and ſet the laws of their country at open defiance. Even north of the Forth, the heads of the houſes of Gray and Drummond ſpread the ſpirit of diſaffection through the populous counties of Fife and Angus: but the counties north of the Grampians continued firm in their duty.

330 Firſt act of defiance by the conſpirators.

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The duke of Rotheſay was then a promiſing youth about fifteen years of age; and the ſubjecting the kingdom of Scotland to that of England being the chief, if not the only cauſe urged by the rebels for their appearing in arms, they naturally threw their eyes upon that prince, as his appearance at their head would give ſtrength and vigour to their cauſe; and in this they were not deceived. James in the mean time, finding the inhabitants of the ſouthern provinces were either engaged in the rebellion, or at beſt obſerved a cold neutrality, embarked on board of a veſſel which was then lying in the frith of Forth, and paſſed to the north of that river, not finding it ſafe to go by land to Stirling. Arriving at the caſtle, he gave orders that the duke of Rotheſay (as foreſeeing what afterwards happened) ſhould be put under the care of one Schaw of Sauchie, whom he had made its governor, charging him not to ſuffer the prince upon any account to depart out of the fort. The rebels giving out that James had fled to Flanders, plundered his equipages and baggage before they paſſed the Forth; and they there found a large ſum of money, which proved to be of the utmoſt conſequence to their affairs. They then ſurpriſed the caſtle of Dunbar, and plundered the houſes of every man to the ſouth of the Forth whom they ſuſpected to be a royaliſt.

331 The duke of Rotheſay put into confinement.

332 Succeſs of the rebels.

James was all this time making a progreſs, and holding courts of juſtice, in the north, where the great families were entirely devoted to his ſervice, particularly the earls of Huntley, Errol, and Marſhal.—Every day brought him freſh alarms from the ſouth, which left him no farther room either for delay or deliberation. The conſpirators, notwithſtanding the promiſing appearance of their affairs, found, that in a ſhort time their cauſe muſt languiſh, and their numbers dwindle, unleſs they were furniſhed with freſh pretexts, and headed by a perſon of the greateſt authority. While they were deliberating who that perſon ſhould be, the earl of Angus boldly propoſed the duke of Rotheſay; and an immediate application was made to Schaw, the young prince's governor, who ſecretly favoured their cauſe, and was prevailed upon by a conſiderable ſum of money to put the prince into their hands, and to declare for the rebels.

333 They are headed by the duke of Rotheſay.

James having ordered all the force in the north to aſſemble, hurried to Perth (then called St John's town), where he appointed the rendezvous of his army, which amounted to 30,000 men. Among the other noblemen who attended him was the famous lord David Lindſay of the Byres (an officer of great courage and experience, having long ſerved in foreign countries), who headed 3000 foot and 1000 horſe, moſtly raiſed in Fifeſhire. Upon his approaching the king's perſon, he preſented him with a horſe of remarkable ſpirit and beauty, and informed his majeſty, that he might truſt his life to his agility and ſure-footedneſs. The lord Ruthven, who was ſheriff of Strathern, and anceſtor (if we miſtake not) to the unfortunate earls of Gowry, joined James at the head of 3000 well armed men.

The

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334 James aſſembles his army.

The whole army being aſſembled, James proceeded to Stirling; but he was aſtoniſhed, when he was not only denied entrance into the caſtle, but ſaw the guns pointed againſt his perſon, and underſtood, for the firſt time, that his ſon was at the head of the rebels. Schaw pretended that the duke of Rothſay had been carried off againſt his will: But the king's anſwer was, "Fye, traitor, thou haſt deceived me; and if I live I ſhall be revenged on thee, and thou ſhalt be rewarded as thou haſt ſerved." James lay that night in the town of Stirling, where he was joined by all his army; and underſtanding that the rebels were advancing, he formed his line of battle. The earl of Athol his uncle, who was truſted by both parties, propoſed an accommodation; which was accordingly effected, if we are to believe Abercromby and other hiſtorians; but we know not the terms, for none are mentioned on either ſide.—James is ſaid to have failed on his part; but had there been any grounds for ſuch a charge againſt him, there can ſcarcely be a doubt but that the rebels would have publiſhed them. That a treaty was entered into is paſt diſpute; and the earl of Athol ſurrendered himſelf as a hoſtage into the hands of the rebels.

James was ſenſible of the advantage which public clamour gave to his enemies; and he applied to the kings of France and England, and the pope, for their interpoſition. His holineſs named Adrian de Caſtello for his nuncio on that occaſion; and the two kings threatened to raiſe troops for the ſervice of James.—He, by a fatality not uncommon to weak princes, left the ſtrong caſtle of Edinburgh, where he might have been in ſafety till his friends, who had diſperſed themſelves upon the faith of the late negociation, could be reaſſembled; and croſſing the Forth, he made another attempt to be admitted into the caſtle of Stirling; but was diſappointed, and informed that the rebels were at Torwood in the neighbourhood, and ready to give him battle. He was in poſſeſſion of the caſtle of Blackneſs; his admiral, Wood, commanded the Forth; and his loyal ſubjects in the north were upon their march to join him. Hawthornden ſays, that the rebels had made a ſhow of diſmiſſing their troops, that they might draw James into the field; and that while he remained at Blackneſs, he was attended by the earls of Montroſe, Glencairn, and the Lords Maxwell and Ruthven. To give his northern troops time to join him, he propoſed a negociation; but that was ſoon at an end, upon the rebels peremptorily requiring him to reſign his crown to his ſon, that is, to themſelves.

335 Is required by the rebels to reſign his crown.

The rebels had been inured to war. They conſiſted chiefly of borderers, well armed and diſciplined; in which they had the advantage of the king's Lowland ſubjects, who had not been accuſtomed to arms. What the numbers on both ſides were does not clearly appear; but it is probable that the forces of James were ſuperior to the rebels. They were then at Falkirk; but they ſoon paſſed the Carron, encamped above the bridge near Torwood, and made ſuch diſpoſitions as rendered a battle unavoidable, unleſs James would have diſperſed his army, and gone on board Wood's ſhips: but he did not know himſelf, and reſolved on a battle. He was encamped at a ſmall brook named Sauchie-burn, near the ſame ſpot of ground where the great Bruce had defeated the Engliſh under Edward the ſecond. The earl of Menteith, the lords Erſkine, Graham, Ruthven, and Maxwell commanded the firſt line of the king's army. The ſecond was commanded by the earl of Glencairn, who was at the head of the Weſtland and Highland men. The earl of Crawford, with the lord Boyd and Lindſay of Byres, commanded the rear, where the king's main ſtrength conſiſted, and where he himſelf appeared in perſon, completely armed, and mounted upon the beſt horſe which had been produced to him by Lindſay.

336 Comes to a battle with them.

The firſt line of the royalits charged that of the rebels to give way; but the latter being ſupported by the Annandale men and borderers, the firſt and ſecond line of the king's army were beat back to the third. The little courage James poſſeſſed had forſaken him at the firſt onſet; and he had put ſpurs to his horſe, intending to gain the banks of the Forth, and to go on board one of Wood's ſhips. In paſſing through the village of Bannockburn, a woman who was filling her pitcher at the brook, frightened at the ſight of a man in armour galloping full ſpeed, left it behind her; and the horſe taking fright, the king was thrown to the ground, and carried, bruiſed and maimed, by a miller and his wife, into their hovel. He immediately called for a prieſt to make his confeſſion, and the miller demanded his name and rank. "I was (ſaid he meaningly) your king this morning." The woman, overcome with aſtoniſhment, clapped her hands, and running to the door called for a prieſt to confeſs the king. "I am a prieſt (ſaid one paſſing by), lead me to his majeſty." Being introduced into the hovel, he law the king covered with a coarſe cloth; and kneeling by him, he aſked James whether he thought he could recover, if properly attended by phyſicians? James anſwering in the affirmative, the villain pulled out a dagger, and ſtabbed him to the heart. Such is the dark account we are able to give of this prince's unhappy end. The name of the perſon who murdered him is ſaid to have been Sir Andrew Borthwick, a prieſt, one of the pope's knights. Some pretend that the lord Gray, and others that Robert Stirling of Keir, was the regicide; and even Buchanan (the tenor of whoſe hiſtory is a juſtification of this murder), is uncertain as to the name of the perſon who gave him the fatal blow.

It is probable that the royalits loſt the battle through the cowardice of James. Even after his flight his troops fought bravely; but they were damped on receiving the certain accounts of his death. The prince, young as he was, had an idea of the unnatural part he was acting, and before the battle he had given a ſtrict charge for the ſafety of his father's perſon. Upon hearing that he had retired from the field, he ſent orders that none ſhould purſue him; but they were ineffectual, the rebels being ſenſible that they could have no ſafety but in the king's death. When that was certified, hoſtilities ſeemed to ceaſe; nor were the royalits purſued. The number of ſlain on both ſides is uncertain; but it muſt have been conſiderable, as the earl of Glencairn, the lords Semple, Lindſay, and Ruthven, and other gentlemen of great eminence, are mentioned. As to the duke of Rothſay, who was now king, he appeared inconſolable when he heard of his father's death; but the rebels endeavoured to allay his grief, by the proſtrations of honours they paid him when he was recognized as king.

The remorſe and anguiſh of the young king, on reflecting

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flecting upon the unnatural part he had acted, was inexpreſſible; and the noblemen who had been engaged in the rebellion became apprehenſive for their own ſafety. The cataſtrophe of the unfortunate James III. however, was not yet become public; and it was thought by many that he had gone aboard ſome of the ſhips belonging to the Scottiſh admiral Sir Andrew Wood. James, willing to indulge hope as long as it was poſſible, deſired an interview with the admiral; but the latter refuſed to come on ſhore, unleſs he had ſufficient hoſtages for his ſafety. Theſe being delivered, Sir Andrew waited upon the king at Leith. He had again and again, by meſſages, aſſured him that he knew nothing of the late king; and he had even offered to allow his ſhips to be ſearched: yet ſuch was the anxiety of the new king, that he could not be ſatisfied till he had examined him in perſon. Young James had been long a ſtranger to his father, ſo that he could not have diſtinguiſhed him eaſily from others. When Wood, therefore, entered the room, being ſtruck with his noble appearance, he aſked him, "Are you my father?" "I am not," replied Wood, burſting into tears; "but I was your father's true ſervant, and while I live I ſhall be the determined enemy of his murderers." This did not ſatisfy the lords, who demanded whether he knew where the king was. The admiral replied, that he knew not; and upon their queſtioning him concerning his manœuvres on the day of battle, when his boats were ſeen plying backwards and forwards, he told them, that he and his brother had determined to aſſiſt the king in perſon; but all they could do was to ſave ſome of the royaliſts in their ſhips. "I would to God (ſays he), my king was there ſafely, for I would defend and keep him ſkaithleſs from all the traitors who have cruelly murdered him: for I think to ſee the day to behold them hanged and drawn for their demerits." This ſpirited declaration, and the freedom with which it was delivered, ſtruck the guilty part of the council with diſmay; but the fear of ſacrificing the hoſtages procured Wood his freedom, and he was ſuffered to depart to his ſhips. When he came on board, he found his brother preparing to hang the two lords who had been left as hoſtages; which would certainly have been their fate, had the admiral been longer detained.

340 Noble behaviour of Sir Andrew Wood.

Wood had ſcarcely reached the ſhips, when the lords, calling the inhabitants of Leith together, offered them a large premium if they would fit out a ſufficient force to deſtroy that bold pirate and his crew, as they called Wood; but the townſmen, who, it ſeems, did not much care for the ſervice, replied, that Wood's ſhips were a match for any ten ſhips that could be fitted out in Scotland. The council then removed to Edinburgh, where James IV. was crowned on the 24th of June 1487.

341 The regicides aſſemble a parliament.

In the month of October this year, the nobility and others who had been preſent at the king's coronation, converted themſelves into a parliament, and paſſed an act by which they were indemnified for their rebellion againſt their late ſovereign; after which, they ordered the act to be exemplified under the great ſeal of Scotland, that it might be producible in their juſtification if called for by any foreign prince. They next proceeded to the arduous taſk of vindicating their rebellion in the eyes of the public; and ſo far did they gain upon the king by the force of flattery, that he conſented to ſummon the lords who had taken part with his father, before the parliament, to anſwer for their conduct. In conſequence of this, no fewer than 28 lords were cited to appear at Edinburgh in the ſpace of 40 days. The firſt upon the liſt was the lord David Lindſay, whoſe form of arraignment was as follows. "Lord David Lindſay of the Byres, anſwer for the cruel coming againſt the king at Bannockburn with his father, giving him counſel to have devoured the king's grace here preſent; and, to that effect, gave him a ſword and a good horſe to fortify him againſt his ſon. Your anſwer hereto." Lord Lindſay was remarkable for the bluntneſs of his converſation and the freedom of his ſentiments; and being irritated by this charge, he delivered himſelf in ſuch a manner concerning the treaſon of the rebellious lords, as abaſhed the boldeſt of his accuſers. As they were unable to anſwer him, all they could do was to preſs him to throw himſelf upon the king's clemency; which he refuſed, as being guilty of no crime. His brother, Patrick Lindſay, undertook to be his advocate, and apologized upon his knees for the roughneſs of his behaviour, and at laſt obſerved an informality in the proceedings of the court; in conſequence of which Lindſay was releaſed, upon entering into recognizance to appear again at an appointed day: however, he was afterwards ſent priſoner by the king's order, for a whole twelvemonth, to the caſtle of Rotheſay in the Iſle of Bute.

342 Trial of Lord David Lindſay of Byres.

343 Who is impriſoned.

The regicides now endeavoured to gain the public favour by affecting a ſtrict adminiſtration of juſtice. The king was adviſed to make a progreſs round the kingdom, attended by his council and judges; while, in the mean time, certain noblemen and gentlemen were appointed to exerciſe juſtice, and to ſuppreſs all kinds of diſorders in their own lands and in thoſe adjoining to them, till the king came to the age of 21. The memory of the late king was branded in the moſt opprobrious manner. All juſtices, ſheriffs, and ſtewarts, who were poſſeſſed of heritable offices, but who had taken up arms for the late king, were either deprived of them for three years, or rendered incapable of enjoying them for ever after. All the young nobility who had been diſinherited by their fathers for taking arms againſt the late king, were, by act of parliament, reſtored to their ſeveral ſucceſſions in the moſt ample manner. At laſt, in order to give a kind of proof to the world that they intended only to reſettle the ſtate of the nation, without prejudice to the lower ranks of ſubjects, who did no more than follow the examples of their ſuperiors, it was enacted, "That all goods and effects taken from burgeſſes, merchants, and thoſe who had only perſonal eſtates, or, as they are called, *unlanded men*, ſince the battle of Stirling, were not only to be reſtored, but the owners were to be indemnified for their loſſes; and their perſons, if in cuſtody, were to be ſet at liberty. Churchmen, who were taken in arms, were to be delivered over to their ordinances, to be dealt with by them according to the law." The caſtle of Dunbar was ordered to be demoliſhed; and ſome ſtatutes were enacted in favour of commerce, and for the excluſion of foreigners.

344 The new parliament affects popularity.

Theſe laſt acts were paſſed with a view to recompence the boroughs, who had been very active in their oppoſition to the late king. However, the lords, before they diſſolved their parliament, thought it neceſſary

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ry to give ſome public teſtimony of their diſapproving the late king's connection with England. It was therefore enacted, "That as the king was now of an age to marry a noble princeſs, *born and deſcended of a noble and worſhipful houſe*, an honourable embaſſy ſhould be ſent to the realms of France, Brittany, Spain, and other places, in order to conclude the matter." This embaſſy was to be very ſplendid. It was to conſiſt of a biſhop, an earl, or lord of parliament, a ſecretary, who was generally a clergyman, and a knight. They were to be attended by 50 horſemen; 5000 l. was to be allowed them for the diſcharge of their embaſſy, and they were empowered to renew the ancient league between France and Scotland; and, in the mean time, a herald, or, as he was called, a *truſty ſquire*, was ſent abroad to viſit the ſeveral courts of Europe, in order to find out a proper match for the king. One conſiderable obſtacle, however, lay in the way of this embaſſy. The pope had laid under an interdict of all thoſe who had appeared in arms againſt the late king; and the party who now governed Scotland were looked upon by all the powers of Europe as rebels and murderers. The embaſſy was therefore ſuſpended for a conſiderable time; for it was not till the year 1491 that the pope could be prevailed upon to take off the interdict, upon the moſt humble ſubmiſſions and profeſſions of repentance made by the guilty parties.

345 Act relative to the king's marriage.

346 They are oppoſed by the Pope.

In the mean time, the many good qualities which diſcovered themſelves in the young king began to conciliate the affections of his people to him. Being conſidered, however, as little better than a priſoner in the hands of his father's murderers, ſeveral of the nobility made uſe of that as a pretence for taking arms. The moſt forward of theſe was the earl of Lenox, who with 2000 men attempted to ſurpriſe the town of Stirling; but, being betrayed by one of his own men, he was defeated, taken unawares, and the caſtle of Dumbarton, of which he was the keeper, taken by the oppoſite party. In the north, the earls of Huntley and Marſhal, with the Lord Forbes, complained that they had been deceived, and declared their reſolution to revenge the late king's death. Lord Forbes having procured the bloody ſhirt of the murdered prince, diſplayed it on the point of a lance, as a banner under which all loyal ſubjects ſhould liſt themſelves. However, after the defeat of Lenox, the northern chieftains found themſelves incapable of marching ſouthwards, and were therefore obliged to abandon their enterpriſe.

347 Attempts to revenge the death of James III.

348 Henry VII. ſends five ſhips for this purpoſe,

The cauſe of the murdered king was next undertaken by Henry VII. of England, who made an offer to Sir Andrew Wood of five ſhips to revenge it. The admiral accepted the propoſal; but the Engliſh behaving as pirates, and plundering indiſcriminately all who came in their way, he thought proper to ſeparate himſelf from them, yet without offering to attack or oppoſe them. Upon this, James was adviſed to ſend for the admiral, to offer him a pardon, and a commiſſion to act againſt the Engliſh freebooters. Wood accepted of the king's offer; and being well provided with ammunition and artillery, he, with two ſhips only, attacked the five Engliſh veſſels, all of which he took, and brought their crews priſoners to Leith, for which he was nobly rewarded by his majeſty.

349 Who act piratically, and are all taken by Sir Andrew Wood.

This conduct of Wood was highly reſented by the king of England, who immediately vowed revenge. The Scottiſh admiral's ſhips had been fitted out for commerce as well as war, and Henry commanded his beſt ſea-officer, Sir Stephen Bull to intercept him on his return from Flanders, whether he had gone upon a commercial voyage. Wood had no more than two ſhips with him: the Engliſh admiral had three; and thoſe much larger, and carrying a greater weight of metal, than the Scottiſh veſſels. The Engliſh took their ſtation at the iſland of May, in the mouth of the Frith of Forth, and, having come unawares upon their enemies, fired two guns as a ſignal for their ſurrendering themſelves. The Scottiſh commander encouraged his men as well as he could; and finding them determined to ſtand by him to the laſt, began the engagement in ſight of numberleſs ſpectators who appeared on both ſides of the frith. The fight continued all that day, and was renewed with redoubled fury in the morning; but, in the mean time, the ebb-tide and a ſouth wind had carried both ſquadrons to the mouth of the Tay. Here the Engliſh fought under great diſadvantages, by reaſon of the ſand-banks; and before they could get clear of them, all the three were obliged to ſubmit to the Scots, who carried them to Dundee. Wood treated his priſoners with great humanity; and having afterwards preſented them to King James, the latter diſmiſſed them not only without ranſom, but with preſents to the officers and crews, and a letter to King Henry. To this Henry returned a polite anſwer, a truce was concluded, and all differences for the preſent were accommodated.

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350 Sir Stephen Bull ſent againſt the Scottiſh admiral.

351 But is taken with all his ſhips.

James all this time had continued to diſplay ſuch moderation in his government, and appeared to have the advantage of his ſubjects ſo much at heart, that they became gradually well affected to his government, and in 1490 all parties were fully reconciled. We may from thence date the commencement of the reign of James IV.; and the next year the happineſs of his kingdom was completed, by taking off the pope's interdict, and giving the king abſolution for the hand he had in his father's death.

Tranquillity being thus reſtored, the negociations concerning the king's marriage began to take place, but met with ſeveral interruptions. In 1493, Henry VII. propoſed a match between the king of Scotland and his couſin the princeſs Catharine. James was too much attached to France to be fond of Engliſh connections, and probably thought this match below his dignity; in conſequence of which the propoſal was treated with contempt. However, notwithſtanding this ill ſucceſs, Henry made another offer of alliance with James; and, in 1495, propoſed a marriage betwixt him and his eldeſt daughter Margaret. This propoſal was accepted: but the match ſeems not to have been at all agreeable to James; for, at the very time in which he was negociating the marriage, he not only protected Perkin Warbeck, the avowed enemy and pretender to the crown of Henry, but invaded England on his account. This conduct was highly reſented by the Engliſh parliament; but Henry himſelf forgave even this groſs inſult, and the marriage negociations were once more reſumed. The bride was no more than ten years and ſix months old; and being only the fourth degree of blood from James, it was neceſſary to procure a diſpenſation from the pope. This being obtained, a treaty of perpetual peace was concluded between the two

352 Marriage treaty with England.

nations,

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nations, on the 1ſt of July 1503, being the firſt that had taken place for 170 years, ſince the peace of Northampton, concluded between Robert I. and Edward III.

353 A perpetual peace with that nation.

One of the great ends which Henry had in view in promoting this marriage, was to detach James from the French intereſt: no ſooner, therefore, was the treaty ſigned, than he wrote to his ſon-in-law to this purpoſe; who, however, politely declined to break with his ancient ally. On the 16th of June, the royal bride ſet out from Richmond in Surry, in company with her father, who gave her the convoy as far as Collewеſton, the reſidence of his mother the counteſs of Richmond. After paſſing ſome days there, the king reſigned his daughter to the care of the earls of Surry and Northumberland, who proceeded with her to the borders of Scotland. Here a number of the company were permitted to take their leave; but thoſe who remained ſtill made a royal appearance. At Lamberton church they were met by James, attended by a numerous train of his nobility and officers of ſtate. From Lamberton they proceeded to Dalkeith, and next day to Edinburgh; where the nuptials were celebrated with the greateſt ſplendor. On this occaſion, it is ſaid that the Scots ſurpaſſed all their gueſts in extravagance and luxury: which muſt have been owing to the great intercourſe and commerce which James and his ſubjects maintained with foreign courts and countries.

354 Magnificence of the royal nuptials.

After the celebration of the nuptials, James appears to have enjoyed a tranquillity unknown almoſt to any of his predeceſſors; and began to make a conſiderable figure among the European potentates. But the magnificence of his court and embaſſies, his liberality to ſtrangers and to learned men, his coſtly edifices, and, above all, the large ſums he laid out in ſhip-building, had now brought him into ſome difficulties; and he ſo far attended to the advice and example of his father-in-law, that he ſupplied his neceſſities by reviving dormant penal laws, particularly with regard to wardſhips and old titles of eſtates, by which he raiſed large ſums. Though he did this without aſſembling his parliament, yet he found agents who juſtified thoſe proceedings, in the ſame manner as Epſon and Dudley did thoſe of Henry, under the ſanction of law. At laſt, however, touched with the ſufferings of his ſubjects, he ordered all proſecutions to be ſtopped. He even went farther: for, ſenſible of the deteſtation into which his father-in-law's avarice had brought himſelf and his adminiſtration, he ordered the miniſters who had adviſed him to thoſe ſhameful courſes to be impriſoned; and ſome of them, who probably had exceeded their commiſſion, actually died in their confinement.

355 James becomes a powerful monarch.

About this time, James applied himſelf, with incredible aſſiduity, to the building of ſhips; one of which, the St Michael, is ſuppoſed to have been the largeſt then in the world (M). He worked with his own hands in building it; and it is plain, from his conduct, that he was aſpiring to be a maritime power, in which he was encouraged by the excellent ſeamen which Scotland then produced. The firſt eſſay of his arms by ſea was in favour of his kinſman John king of Denmark. This prince was brother to Margaret queen of Scotland; and had partly been called to the throne of Sweden, and partly poſſeſſed it by force. He was oppoſed by the adminiſtrator, Sture, whom he pardoned after he was crowned. Sture, however, renewing his rebellion, and the Norwegians revolting at the ſame time, John found himſelf under ſuch difficulties, that he was forced to return to Denmark; but he left his queen in poſſeſſion of the caſtle of Stockholm, which ſhe bravely defended againſt Sture and the Swedes. This heroic princeſs became a great favourite with James; and ſeveral letters that paſſed between them are ſtill extant. The king of Denmark, next to the French monarch, was the favourite ally of James; who, early in his reign, had compromiſed ſome differences between them. It likewiſe appears, from the hiſtories of the north, that both James and his father had given great aſſiſtance to his Daniſh majeſty in reducing the Norwegians; and he reſolved to become a party in the war againſt the Swedes, and the Lubeckers who aſſiſted them, if the former

356 Applies himſelf to maritime affairs.

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(M) Of this ſhip we have the following account by Lindſay of Pitſcottie. "In the ſame year, the king of Scotland bigged a great ſhip, called the *Great Michael*, which was the greateſt ſhip, and of moſt ſtrength, that ever ſailed in England or France. For this ſhip was of ſo great ſtature, and took ſo much timber, that, except Falkland ſhe waſted all the woods in Fife, which was oak-wood, by all timber that was gotten out of Norway; for ſhe was ſo ſtrong, and of ſo great length and breadth (all the wrights of Scotland, yea, and many other ſtrangers, were at her device, by the king's commandment, who wrought very buſily in her: but it was a year and day ere ſhe was complete); to wit, ſhe was twelve ſcore feet of length, and thirty-ſix foot within the ſides. She was ten foot thick in the wall, outted jeſts of oak in her wall, and boards on every ſide, ſo ſtark and ſo thick, that no cannon could go through her. This great ſhip cumbered Scotland to get her to the ſea. From that time that ſhe was afloat and her maſts and ſails complete, with tows and anchors effeiring thereto, ſhe was counted to the king to be thirty thouſand pounds of expences, by her artillery, which was very great and coſtly to the king, by all the reſt of her orders; to wit, ſhe bare many cannons, ſix on every ſide, with three great baſſils, two behind in her dock, and one before, with three hundred ſhot of ſmall artillery, that is to ſay, myand and battret-falcon, and quarter-falcon, ſlings, peſtelent ſerpetens, and double-dogs, with hagtor and culvering, cors-bows and hand-bows. She had three hundred mariners to ſail her; ſhe had ſix ſcore of gunners to uſe her artillery; and had a thouſand men of war, by her captain, ſhippers, and quarter maſters.

"When this ſhip paſt to the ſea, and was lying in the road, the king gart ſhoot a cannon at her, to eſſay her if ſhe was wight; but I heard ſay, it deared her not, and did her little ſkaith. And if any man believe that this deſcription of the ſhip be not of verity, as we have written, let him paſs to the gate of Tillibardin, and there, afore the ſame, ye will ſee the length and breadth of her, planted with hawthorn, by the wright that helped to make her. As for other properties of her, Sir Andrew Wood is my author, who was quarter-maſter of her; and Robert Bartyne, who was maſter-ſhipper."

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former continued in their revolt. Previous to this, he sent an ambassador to offer his mediation between John and his subjects. The mediation was accordingly accepted of, and the negociations were opened at Calmar. The deputies of Sweden not attending, John prevailed with those of Denmark and Norway to pronounce sentence of forfeiture against Sture and all his adherents. In the mean time, the siege of the castle of Stockholm was so warmly pressed, that the garrison was diminished to a handful, and those destitute of all kind of provisions; so that the brave queen was forced to capitulate, and to surrender up the fortress, on condition that she would be suffered to depart for Denmark; but the capitulation was perfidiously broken by Sture, and she was confined in a monastery.

357 James assists Denmark against Sweden.

It was on this occasion that James resolved to employ his maritime power. He wrote a letter, conceived in the strongest terms, to the archbishop of Upsal, the primate of Sweden, exhorting him to employ all his authority in favour of the king; and another letter to the Lubeckers, threatening to declare war against them as well as the Swedes, if they jointly continued to assist the rebels. According to Hollinshed, James, in consequence of king John's application, gave the command of an army of 10,000 men to the earl of Arran, who replaced John upon his throne. Though this does not strictly appear to be truth, yet it is certain, that, had it not been for James, John must have sunk under the weight of his enemies. Sture, whose arms had made great progress, hearing that a considerable armament was fitting out in Scotland, and knowing that James had prevailed with the French king to assist John likewise, agreed to release the queen, and to conduct her to the frontiers of Denmark; where he died. By this time, James's armament, which was commanded by the earl of Arran, had set sail; but perceiving that all matters were adjusted between John and the Swedes, the ships returned sooner than James expected, "which (says he, in a very polite letter he wrote to the queen upon the occasion) they durst not have done, had they not brought me an account that her Danish majesty was in perfect health and safety." The severity of John having occasioned a fresh revolt, James again sent a squadron to his assistance, which appeared before Stockholm, and obliged the Lubeckers to conclude a new treaty.

358 Chastises the Flemings and Hollanders.

James, having thus honourably discharged his engagements with his uncle the king of Denmark, turned his attention towards the Flemings and Hollanders, who had insulted his flag, on account of the assistance he had afforded the duke of Gueldres, as well as from motives of rapaciousness, which distinguished those traders, who are said not only to have plundered the Scots ships, but to have thrown their crews overboard to conceal their villany. James gave the command of a squadron to Barton; who put to sea, and, without any ceremony, treated all the Dutch and Flemish traders who fell into his hands as pirates, and sent their heads in hogsheads to James. Soon after, Barton returned to Scotland, and brought with him a number of rich prizes, which rendered his reputation as a seaman famous all over Europe.—James was then so much respected upon the continent, that we know of no resentment shown either by the court of Spain, whose subjects those Netherlanders were, or of any other power in Europe, for this vigorous proceeding.

359 Cause of quarrel with England.

The peace with England continued all the time of Henry VII. nor did his son Henry VIII. though he had not the same reason as his father to keep well with the Scots, for some time shew any disposition to break with them. A breach, however, did very soon take place, which was never afterwards thoroughly made up.

About 30 years before, one John Barton (a relation, probably, to the famous Barton) commanded a trading vessel, which was taken by two Portuguese sea-captains in the port of Sluys; and the captain, with several Scotchmen, were killed in endeavouring to defend their property. The action was esteemed cowardly as well as piratical, because it was done under the protection of a large Portuguese squadron. The ship and the remaining part of the crew, with the cargo, were carried to Portugal, from whence no redress could be obtained; and James III. granted letters of marque to John and Robert Bartons, heirs to the Barton who had been murdered. Upon the accession of James IV. to the crown of Scotland, the letters of marque were recalled, and a friendly correspondence was entered into between James and his Portuguese majesty. No redress, however was to be had from the latter; and Robert Barton being made a prisoner, and his ship a prize, he was detained in Zealand, till James procured his deliverance, by applying in his favour to the emperor Maximilian. Sir Andrew Barton took part in the quarrel and having obtained a like letter of marque, he made dreadful depredations on the Portuguese trade, and, according to English authors, he plundered many English ships, on pretence of their carrying Portuguese property, and made the navigation of the narrow seas dangerous to Englishmen. The court of London received daily complaints of Barton's depredations; but Henry being at this time very averse to a quarrel with James, these complaints being heard with great coldness at this council-board. The earl of Surry had then two sons, gallant noblemen; and he declared to Henry's face, that while he had an estate that could furnish out a ship, or a son who was capable of commanding one, the narrow seas should not be infested. Henry could not discourage this generous offer; and letters of marque were accordingly granted to the two young noblemen, Sir Thomas and Sir Edward Howard. The prizes that Barton had taken had rendered his ships immensely rich, consequently they were heavy laden, and unfit for fighting; while we may easily suppose, that the ships of the Howards were clean, and of a superior force in every respect to those of Barton. After encountering a great deal of foul weather, Sir Thomas Howard came up with the Lyon, which was commanded by Sir Andrew Barton in person; and Sir Edward fell in with the Unicorn, Barton's other ship. The event was such as might be expected from the inequality of the match. Sir Andrew Barton was killed, while he was animating, with his whistle, his men to hold out to the last; and both the Scotch ships being taken, were carried in triumph to London, with their crews prisoners.

END OF THE SIXTEENTH VOLUME

ERRATUM.

In the article ROTATION, the small Italic *ſ*, which has been inadvertently uſed inſtead of the large *ſ*, marks a fluent, or the ſum of fluxionary quantities.

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